IEEE
ELECTRON DEVICES SOCIETY
Newsletter

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Table of Contents

President's Message

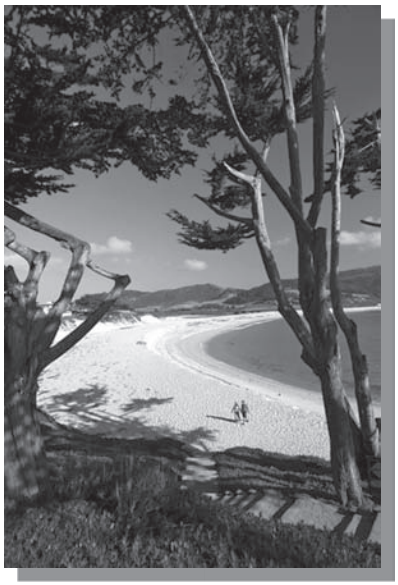
Renuka P. Jindal
EDS President

As the saying goes "Time flies when you are having fun." A similar phenomenon manifests itself when you are extremely busy. We have covered a lot of ground over the first ten months of my Presidency and made significant progress in moving towards our vision for the Society. Although we have faced significant challenges during this journey, it has been exciting and satisfying. Let me go over some of our successes leaving the "works-in-progress" for the next time.

- **IEEE Journal of Photovoltaics is a reality.** Key EDS volunteers, working closely with the photovoltaics community, other IEEE society Presidents, and support from 2010 IEEE Vice-President, Technical Activities, Roger Pollard, Mary Ward-Callan, Managing Director of Technical Activities, and Jim Prendergast, IEEE Executive Director, this journal was approved by the IEEE Technical Advisory Board (TAB) at its meeting in Montreal in June 2010. This proves the point that IEEE societies can work together as a single entity and come

(continued on page 3)

2011 IEEE International Reliability Physics Symposium (IRPS)



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Our ability to create integrated circuits that are small, fast, and consume very little power is nothing short of amazing. However, these capabilities would be worthless if we were unable to make these circuits reliable. Reliability is one of the most daunting challenges for the semiconductor industry. Its practitioners require keen insight into semiconductor physics, chip processing techniques, circuit design, failure mechanisms, and statistics. The premiere conference for the latest research in this field is the IEEE International Reliability Physics Symposium (IRPS). In 2011, the conference will be held April 10–14 at the Hyatt Regency Monterey Resort and Spa in Monterey, California. IRPS is a five-day event, featuring two days of tutorials, a three-day technical symposium, an equipment exposition, workshops, and more.

This year's technical symposium promises to be even more diverse than recent years' events. Historically, IRPS focused on integrated circuits in applications that demanded high levels of reliability, such as defense electronics. As the applications for the IC grew, IRPS expanded to cover reliability issues with computers, telecommunications, automotive and industrial electronics, and consumer electronics. This year, the new technical thrust area is Electronics for Medical and Healthcare Applications, including lab-on-chip,

(continued on page 7)

Your Comments Solicited

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

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ELECTRON DEVICES SOCIETY

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

2010	Term	2011	Term	2012	Term
J. N. Burghartz	(2)	G. Baccarani	(2)	R. Huang	(2)
M. J. Chan	(2)	M. J. Deen	(2)	S. S. Iyer	(1)
S. Ikeda	(2)	S. Deleonibus	(1)	M. Meyyappan	(1)
R. J. Nikolic	(2)	F. Guarin	(1)	H.S. Momose	(2)
T. L. Ren	(1)	S. Saha	(1)	A. Nathan	(1)
R. M. Todi	(1)	H. Shang	(2)	M. Shur	(1)
J. J. Welser	(2)	J. W. Swart	(2)	B. Zhao	(1)
		P. K. L. Yu	(1)		

NEWSLETTER EDITORIAL STAFF

CONTRIBUTIONS WELCOME

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

NEWSLETTER DEADLINES

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

The EDS Newsletter archive can be found on the Society web site at http://eds.ieee.org/eds-newsletters.html.
The archive contains issues from July 1994 to the present.

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President's Message

(continued from page 1)

to an agreement on important projects in record time. As any critical initiative, there were tense moments right before the crucial TAB vote and I want to thank Saifur Rahman, Samar Saha and Chris Jannuzzi for pitching with me to make this journal a reality. Jim's congratulatory whisper after the vote still rings in my ears. EDS leadership has an uncanny foresight. We picked BLUE for our Transactions, RED for our fast turn-around Letters and of course now we appropriately picked GREEN for the Photovoltaics journal. This is an exciting addition to the EDS portfolio and will be of great interest to other sponsoring partner societies and rest of the IEEE.

- **Changes to Our Existing Publications**. As mentioned in my last communication we continue to enhance the execution of our existing publications. After the migration of Transaction on Electron Devices (T-ED) to ScholarOne, we have experienced about a 20% increase in submissions. We plan to publish 400 pages over the budget in 2010 to continue to drive down publication time.

  Under the leadership of Samar Saha, our Vice President of Publications, the unrolling of EDS Express (EDX) to publish short research articles reporting on cutting-edge results is on track. We hope to launch it in early 2011, with an expected turn-around time of 7–9 weeks.

  To continue to encourage participation of the global technical community in EDS publications, we are in the throws of defining a new board of volunteers. This board will be charged with the responsibility of taking a closer look at manuscripts that were unable to make it through our rigorous review process, They will work with the author(s) on how to raise the technical quality of the submission to make the contribution publishable. This will take a significant effort on the part of the board members and hence will be initially limited to papers where all of the authors are EDS members. If you are interested in participating in this endeavor, please contact Samar Saha at samar@ieee.org.
- **New EDS Web Site**. Per my last communication, I had instituted an AdHoc committee to re-architect and redesign the Society's website. This was a long-awaited change to fully leverage the latest web technology and reach out to our global membership aligned with our newly adopted mission statement to enhance public visibility and value of EDS membership. Under the leadership of President-Elect Paul Yu and untiring support from EDS Executive Director Chris Jannuzzi and his Piscataway team, the committee has completed the first phase of this initiative. It is therefore with great pleasure that I announce the unrolling of our new image to the world.

  With this stage of the project completed we have achieved the following major milestones:
  - Improved user interface and information architecture
  - Introduced new content management system which will enable the existing EDS staff to maintain our web presence without hiring outside resources
  - Deployed independent web hosting which will enable us to launch upgrades and enhancements at a quicker pace.

  This is a big step forward for EDS. I invite you to visit the new website at www.ieee.org/eds, take ownership and provide feedback at eds@ieee.org. The entire effort was done using existing web-related resources without any budgetary strain beyond what was allotted for normal maintenance of our previous site. To conserve effort, all bookmarks to our previous website will now be redirected to the new site.

  In the coming months, we'll begin adding new features, including members-only areas to the site to further enhance the value of EDS membership. As always, we look forward to hearing from you.
- **Education and Training**. Education and Training continues to be an important part of our member benefit package as we invest $45,000 to support these activities via our Distinguished Lecturer and Mini-colloquia programs this year. In addition, as of the writing of this communication, the 2008 IEDM short course on 22 nm CMOS technology has been released. It is available to you, our members, at an affordable price of $29.99 with a student member price of $9.99 US dollars. Please visit www.ieee.org and click on the "shop" link to order your copy. I have also charged Meyya Meyyappan, our Vice President of Education, to look for training opportunities by partnering with other professional organizations around the globe to serve our members better. Any ideas you have are welcome.
- **Chapter Activities.** As you know one of our primary vehicles to reach out to remote parts of the globe is our chapters. As such it is

(continued on page 8)

Upcoming Technical Meetings

2011 IEEE International Conference on Microelectronic Test Structures (ICMTS)

The 2011 IEEE International Conference on Microelectronic Test Structures (ICMTS) will be organized by the MESA+ Institute for Nanotechnology, University of Twente and sponsored by the IEEE Electron Devices Society, with additional grant support from MESA+. This meeting is the 24th anniversary of the ICMTS and the first time the conference visits the beautiful and lively city of Amsterdam.

The first ICMTS was held in Long Beach in 1988, and since then has cycled between Europe, North America, and Asia. The purpose of the meeting is to bring together designers and users of micro- and nano-electronic test structures to discuss recent developments and future directions. To this end the conference will be held on April 5–7, 2011 and will be preceded by a one-day Tutorial Short Course on Microelectronic Test Structures on April 4, 2011. There will also be a company exhibit relating to test structure measurements in lab and industrial production environments. The topics addressed at ICMTS include:

- Material and Process Characterization
- Test structure design methods
- Replicated Feature Metrology
- Manufacturing of Integrated Circuits and MEMS
- Reliability and Product Failure Analysis
- Nanotechnology, Displays, MEMS, Sensors, and Emerging Devices
- Device and Circuit Modelling, Parameter extraction
- Matching and variability characterization
- Technology R&D, Yield Enhancement, Integration, and Production Process Control
- Test Structure Measurement Utilisation Strategy

The conference will be held at the Trippenhuis, home of the Royal Dutch Academy of Sciences, which is located alongside a canal, between the Nieuwmarkt, the Rembrandthuis and the Mint Tower, right at the heart of the Netherlands capital city.

The capital is bustling with arts, culture, sports and attractions and is famous for the Amsterdam Canal District, listed among the UNESCO World Heritage sites. The historic urban ensemble of the canal district of Amsterdam illustrates exemplary hydraulic and urban planning on a large scale through the entirely artificial creation of a large-scale port city at the end of the 16th and beginning of the 17th centuries. The new network of canals that encircled the old town was accompanied by the repositioning inland of the city's fortified boundaries, the Singelgracht. This was a long-term engineering program that involved extending the city by draining the swampland, using a system of canals in concentric arcs and filling in the intermediate spaces. The gabled facades are characteristic of this middle-class environment, and the dwellings bear witness both to the city's enrichment through maritime trade and the development of a humanist and tolerant culture linked to the Calvinist Reformation.

The Trippenhuis in Amsterdam, accommodates the Royal Netherlands Academy of Arts and Sciences, site of the 2011 ICMTS

The city is linked to the names of famous painters such as Rembrandt van Rijn and Vincent van Gogh, whose numerous masterpieces are collected in Amsterdam's renowned museums, and of the philosopher of Portuguese-Jewish origin, Baruch Spinoza. After dark, Amsterdam has a lively nightlife with stylish bars and pubs, restaurants, clubs and live entertainment to rival any European City. Amsterdam's spirit stretches far beyond the city limits. The surrounding area is a thriving Metropolis with much to see and do.

Nonetheless we expect a high attendance at our plenary sessions, dealing with the hot topics in the characterization of modern micro- and nano-technologies. Experts will exchange the latest progress in topics like variability, matching, parameter extraction, high frequency and noise characterization, and yield.

The technical program will be preceded by a one-day tutorial on hot topics in electron device and process characterization. An equipment exhibition by worldwide leader companies in semiconductor device characterization will give the attendees a unique opportunity to discuss with technical and marketing experts the most innovative solutions in characterization and testing.

Our full program is available on the ICMTS web page: http://icmts2011.ewi.utwente.nl.

We look forward to welcoming you to Amsterdam!

Jurriaan Schmitz
2011 ICMTS General Chair
University of Twente
Enschede, The Netherlands

Luca Selmi
2011 ICMTS Technical Chair
DIEGM, Università degli Studi di Udine
Udine, Italy

2011 IEEE INTERNATIONAL MEMORY WORKSHOP (IMW)

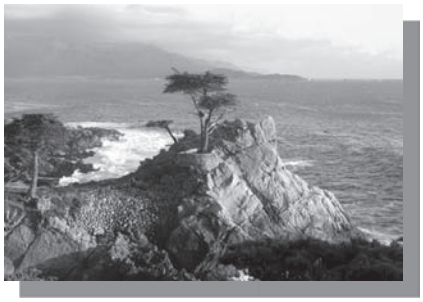
This year, the third IEEE International Memory Workshop (IMW) will be held at the Hyatt Regency Hotel in Monterey, California, Sunday, May 22nd through Wednesday, May 25, 2011. This conference brings the memory community together in a workshop environment to discuss the memory process and design technologies, applications, market needs and strategies. It is sponsored by the IEEE Electron Devices Society and meets annually in May.

Although it is the third IMW meeting to be held this year, it has a long history of Non-Volatile Semiconductor Memory Workshops (NVSMW) dating back to 1976. In 2008, NVSMW and the International Conference on Memory Technology and Design (ICMTD) merged to incorporate both the volatile and non-volatile memory aspects in one forum while maintaining the workshop experience. The decision then was to take the meeting to a new location every year to facilitate local participation. The first combined conference was held in Nice, France, in 2008. After assuming the new name of IMW, the first meeting was in Monterey in 2009 and the second meeting was held in Seoul, Korea, in 2010. In 2012 we plan to go back to Europe.

In the last decade, the convergence of consumer, computer and communications electronic systems led to an exponential growth in the need for code and, mainly, data in all electronic systems. While in the past, we could associate a memory technology to a specific market segment, such as DRAM in computers, NOR Flash in mobile communications devices and NAND Flash in consumer electronics, now we consider a memory system stacking different NVMs and RAM memories. These types of memory systems often include a Controller to facilitate the interfacing. These evolved systems fit the needs of today's "converged" electronic systems better. As they emerged, their implications in terms of memory densities, technology performances, packaging, and interfacing became more and more of interest.

In addition, the characteristics of a memory system are defined by the associated memory technology: its scaling properties for the density, its limitations and its electrical performance for the range of applications. The capabilities provided by the new memory technologies (new concept and materials) proposed today will drive the definition of memory systems in the future. And the IMW wants to answer this need when the scope was extended from non-volatile memory technology and design, which had been successfully discussed in more than 30 years of NVSMW, to the other memory technologies, which were the focus of ICMTD.

The IMW is a unique forum for specialists in all aspects of memory (non-volatile & volatile) microelectronics and people with different backgrounds who wish to gain a better understanding of the field. The morning and afternoon technical sessions are organized in a manner



The beautiful Monterey coastline

that provides ample time for informal exchanges amongst presenters and attendees. The evening panel discussions will address hot topics in the memory and memory system field. Papers are solicited in the many aspects of memory technology, including device physics, silicon processing, memory cell design, 3D structures, product testing, circuit design, reliability, applications, and new technologies.

IMW is attended by a wide international community from North America, Europe and Asia. The number of attendees typically exceeds 300 in recent years, reflecting the growing interest in the workshop. Each year we receive over 80 paper submission and accept about 35 for oral presentation which corresponds to about a 40% acceptance rate. Last year, we had a poster session for several qualified papers. In previous workshops we also organized short courses, such as Phase-Change Memory in 2009 and Charge Trap Memory in 2010. We plan to continue both the poster session and short courses in 2011. Again the important goal of IMW is to provide an informal

environment to encourage discussions and lively interactions among participants. The paper submission deadline is January 19, 2011. Papers are solicited in all aspects of memory technology (Flash, DRAM, SRAM, PCRAM, RRAM, charge trap memory, embedded memory, and other types of memories).

The hotel is conveniently situated in the Monterey peninsula and allows fast access to many sights of tourist interest, such as Fisherman's Wharf, Cannery Row, the Monterey Bay Aquarium, 17-mile Drive, Carmel and many natural beauties of the Monterey coastline. The Hyatt Regency is located at One Old Golf Course Road, Monterey, California.

For more information about the conference, please go to our website at www.ewh.ieee.org/soc/eds/imw.

We look forward to seeing you next May at IMW 2011 in Monterey.

Tamer San
2011 IMW General Chair
Texas Instruments, USA

Jungdal Choi
2011 IMW Technical Chair
Samsung, Korea

Pranav Kaladave
2011 IMW Finance Chair
Intel, USA

2011 IEEE International Symposium on Power Semiconductor Devices and ICs (ISPSD)

The 23rd IEEE International Symposium on Power Semiconductor Devices and ICs (ISPSD), sponsored by the IEEE Electron Devices Society and technically co-sponsored by the IEEE Power Electronics Society, will be held at the Paradise Point Resort, San Diego, California, USA, May 23–26, 2011. ISPSD is the premier forum for technical discussion in all areas of power semiconductor devices and power integrated circuits. Topics of interest include: silicon and wide bandgap power devices, smart power devices, RF power devices, device reliability, process integration, doping technology, carrier lifetime control, high voltage passivation, crystal growth, device and circuit simulation, layout verification tools, Si, GaAs, SiC, GaN, diamond materials, power ICs, isolation techniques, SOI, circuit design, energy capability and SOA, power SoC, Power SiP, novel packaging concepts, stress and thermal analysis, thermal management, and power device applications.

With the Society's awareness in renewable energy and energy efficiency, power semiconductor devices and power ICs once again become a focal point as a key enabling device technology to help solve the world's energy challenge. ISPSD 2011 will have an expected attendance of 300–500 researchers from industries, universities, and research institutions all over the world. Traditionally more than 70% of ISPSD attendees are engineers and technical managers from the power semiconductor industry. More recently, representatives from CMOS foundries and power electronics design firms are also drawn to the conference.

ISPSD 2011 will start with a popular one-day tutorial program on GaN device fabrication, power IC technologies, solid state lighting applications, and solar energy conversion applications. The conference will feature several plenary talks given by world renowned experts, and a collection of high quality technical presentations. A poster session will also be organized to offer an even closer interaction among the attendees. The

ISPSD 2011 will be held at the beautiful vacation isle of Paradise Point Resort & Spa on San Diego's Mission Bay

social programs will be exciting and perhaps a little bit surprising even for long time ISPSD attendees.

Located on a beautiful vacation isle on San Diego's Mission Bay, the Paradise Point Resort provides an ideal atmosphere for a relaxing yet informative symposium. The single session format of the technical program encourages extensive interaction among the conference attendees. The peaceful setting, free from the distractions of modern life, presents a terrific opportunity to get to network with colleagues from all over the world. This is an opportunity not usually available at larger, more hectic conferences.

Additional information about ISPSD 2011 can be found at www.ispsd2011.com, or by contacting Dr. Mohamed Darwish of MaxPower Semiconductor, ISPSD 2011 General Chair (mdarwish@maxpowersemi.com).

On behalf of the ISPSD 2011 Organizing Committee, I look forward to meeting you in San Diego!

John Shen
2011 ISPSD Publicity Chair
University of Central Florida
Orlando, FL, USA

2011 IEEE International Reliability Physics Symposium (IRPS)

(continued from page 1)

implantable, injectable, or ingestible devices, blood and environmental monitoring, wearable electronics, and traditional medical electronics. The other new technical focus areas introduced in recent years such as reliability of alternative energy technologies, and fabless semiconductor product qualification and reliability will also continue.

The IRPS tutorial program is a comprehensive two-day event designed to help both the new engineer and experienced researcher. The tutorial program contains both beginner and expert tracks, and is broken down into topic areas that allow the attendee to participate in tutorials relevant to their work with a minimum of conflicts between subject areas. The management committee has worked hard to make sure that relevant topics are covered, such as photovoltaics reliability, high power/high voltage devices, negative bias temperature instability (NBTI), single event upset (SEU), and more. The Year in Review that occurs after the tutorials, on Monday afternoon, provides the attendees with a summary of the most important developments in key areas of semiconductor reliability. The experts tell you what's important, providing critical insight to new engineers and saving experienced engineers countless hours of research.

The exposition provides the attendee with the opportunity to see the latest in reliability test equipment, software, and services. What started out as an equipment demonstration activity with just a few companies has grown into an integral part of the conference, with dozens of vendors and hundreds of products. The exposition is conveniently located with the conference so that attendees can go back and forth between papers and the exposition effortlessly. This provides an excellent opportunity to evaluate many products in one location, and find out the latest from suppliers one might already be using.

Most conference attendees cite the opportunity to interact with colleagues as the most important reason to attend a conference, and there are plenty of opportunities to do so at IRPS. In addition to the technical papers and the tutorials, there are workshops on a variety of time-sensitive topics in the field of semiconductor reliability, such as product qualification, fast measurement techniques, NBTI, and more. The attendee has the ability to asked specific questions to other practitioners with a moderator to provide guidance and structure. Furthermore, there is a poster reception event where the attendees can interact with the paper authors over hors d'oeuvres.

The city of Monterey provides an excellent backdrop for IRPS 2011. Monterey has top-notch golf courses, a unique aquarium, and beautiful scenery. One can fly into Monterey directly or fly into the larger Bay Area airports, such as San Francisco or San Jose, and make the short 90 minute drive to Monterey.

The 2011 International Reliability Physics Symposium promises to be an excellent event that is broader and more comprehensive than ever before. We are looking forward to seeing you in Monterey, April 10–14 for this event. For more details, please see the IRPS website (www.irps.org) or contact the general chair, James Stathis at 1-914-945-2559, or by e-mail at stathis@us.ibm.com.

Christopher L. Henderson
2011 IRPS Publicity and Web
Semitracks, Inc.
Albuquerque, NM, USA

President's Message

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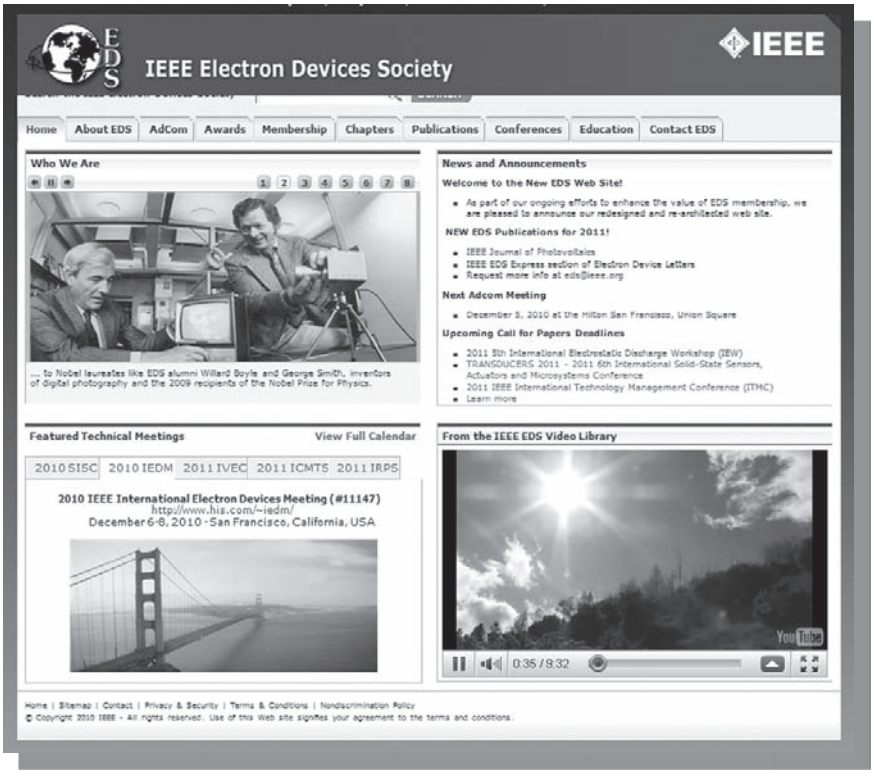


Home page of redesigned EDS web site, http://eds.ieee.org/

important that our 150+ chapters continue to be nurtured and attract more members. Key stakeholders in making this happen are our SRC Chairs, Vice-Chairs, Chapter Chairs and their executive teams. We had a lively discussion in the Chapters Meeting that was held in connection with the EDS AdCom meeting series in Stuttgart, Germany in June 2010. We also discussed this issue at another face-to-face chapter summit meeting in South Asia. Based on these discussions and feedback from past EDS Presidents we have decided to eliminate the Chapter Partner position. We also continue to drive down responsibility by empowering the SRC volunteers to take charge of less active chapters under their jurisdiction. We will make available funds to facilitate greater mobility on their part to execute this role.

- **Member Recognition**. We continue to reach out and honor our members. The latest addition to the IEEE EDS Celebrated Member Status is Herb Kroemer, a long-time EDS member. Herb won the 2000 Nobel Prize in Physics for his work on developing semiconductor heterostructures used in high-speed and opto-electronics.
- **Public Visibility.** We engineers work hard often neglecting an important aspect of our profession – pubic visibility. As you know, "enhancing public visibility" was added to our Mission statement at our 2009 December AdCom in Washington, D.C. To this end, we recently released a video entitled "Accelerating Photovoltaics." This video is the culmination of a two-year effort of many EDS volunteers, including President-Elect Paul Yu and Rebecca Nikolic, and gives a snapshot of how over the last 50 years this science has been transformed into an industry and continues to shape the future of mankind. Clean, renewable energy is key to the future of our planet and engineers and scientists around the world are making it happen with support from IEEE and the Electron Devices Society.
- **Committee Involvement**. A focal point of my presidency is to increase volunteer involvement in all of our committees to help foster the development of the next generation of EDS leaders. We continue to seek broad participation from the global EDS community to get involved in the affairs of the Society. We have many standing and technical committees for you to participate in. These committees are an excellent opportunity to meet colleagues and broaden your professional network. We are looking for something more valuable than your money, i.e., "your time". So raise your hand and be counted.

Last but not the least, I want to thank our Piscataway team and their leader Chris Jannuzzi for working with me to support the "electrifying" pace at which EDS has been functioning. I truly appreciate their devotion to transform our ideas into reality.

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

ELECTRON DEVICES SOCIETY®

CALL FOR NOMINATIONS

IEEE EDS Early Career Award

Grow with EDS

The IEEE Electron Devices Society invites the submission of nominations for the 2011 Early Career Award. The award is presented annually to promote, recognize and support early career technical development within the Electron Devices Society's field of interest.

Prize: $1,000, a certificate, and travel expenses to attend the award presentation at the annual EDS GOLD Lecture that is held in conjunction with the IEEE International Electron Devices Meeting (IEDM).

Eligibility: Candidate must be an IEEE EDS GOLD (Graduate of the Last Decade) member and must have received his/her first professional degree within the 10th year defined by the August 15 nomination deadline and has made contributions in an EDS field of interest area. Nominator must be an IEEE EDS member. Previous award winners are ineligible.

Deadline: August 15, 2011

For more information, visit:
http://eds.ieee.org/early-career-award.html

IEEE

EDS Conferences Committee Report

Bin Zhao
EDS Vice-President of Conferences

The technical meetings, conferences, and symposia sponsored by the Electron Devices Society continue to be at the core of the value IEEE EDS membership offers and are a vital contribution the Society makes to the technical community around the globe.

Given the importance of these technical conferences and meetings, the EDS Conferences Committee consists of members from EDS leadership, including the Vice-President of Technical Activities, Joachim Burghartz, the Vice-President of Regions/Chapters, Juin J. Liou, the Vice-President of Educational Activities, Meyya Meyyappan, Society Treasurer, Stephen A. Parke and GOLD Chair, Ravi Todi. In addition, the committee receives outstanding support from the EDS Executive Office. The primary objective of the Committee is to develop and execute a strategic plan for existing and newly-created conferences, meetings, and symposia around the world. This strategic plan encourages fiscal responsibility, continuous improvement, alignment with goals of EDS and the IEEE, and helps to ensure that they continue to deliver the tremendous technical value that our Society's members have come to expect.

EDS conference sponsorship falls into two categories, financial and technical. The conferences EDS financially sponsors are those for which EDS assumes fiscal responsibility, either solely or with another IEEE Society or another professional society. EDS usually provides an advance to assist with conference organization and planning. In addition, EDS provides a financial backstop for the conference. In return, EDS expects the advance to be repaid and to receive any budget surplus from these conferences to help support subsequent conferences in the future.

Technical co-sponsorship refers to conferences that EDS has determined align with the technical scope of the Society. In addition to providing program planning assistance, EDS helps to promote these conferences through use of the IEEE and EDS logos, advance notices in calendars, and the opportunity to be included in print ads in our periodicals. However, EDS does not have any financial liability or stake in these types of meetings.

In 2011, EDS will financially sponsor or co-sponsor 24 meetings and will technically co-sponsor another 123, for a total of 147. In terms of attendance, the IEEE International Electron Devices Meeting (IEDM), the IEEE Photovoltaic Specialists Conference (PVSC), and the International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS) are the largest EDS meetings, each with more than 1,000 attendees in recent years despite the economic recession. There are also workshops and regional meetings with as few as 50 in attendance. Irrespective of size, all are important venues for bringing together audiences around the world to share and discuss the latest technical findings as well as emerging economic drivers for the research and development in the field of electron device engineering.

A key part of our global strategy to continuously improve services to all of our members and prospective members is to encourage the development of new conferences in underserved regions of the world. This includes exploring new ways to directly involve and recruit student members into our global conference processes.

For an established EDS sponsored or co-sponsored conference, plans for the conference's next occurrence and their proposed budget are reviewed by the EDS Conferences Committee and the Executive Office. EDS repeat meetings scheduled for 2012 were approved at the 2010 December AdCom Meeting held at the IEDM. Repeat occurrences of meetings that receive technical co-sponsorship, which participate in the IEEE Conference Publications Program (CPP) are approved on the same schedule. Proposed new meetings are required to provide organizational information and plans to the EDS Executive Office (contact Jean Bae, jean.bae@ieee.org). This information is reviewed by the EDS Conferences Committee and relevant EDS Technical Committees (TCs) to determine what if any EDS involvement should occur. Those meetings seeking financial co-sponsorship (once receiving an informal endorsement from the Committee and relevant EDS TCs) will be invited to attend the next EDS AdCom meeting to make a formal presentation to AdCom prior to the final vote.

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

Bin Zhao
EDS Vice-President of Conferences
Fairchild Semiconductor
Irvine, CA, USA

EDS Semiconductor Manufacturing Technical Committee Report

Robert R. Doering
EDS SMTC Chair

The Semiconductor Manufacturing Technical Committee currently has eleven members from industry, university, and government labs in Asia, Europe, and North America. These members are very active participants and organizers in semiconductor manufacturing conferences, publications, R&D, and operations. Subsets of us often collaborate in some of these activities. We anticipate further expanding these efforts via the addition of one or two new members in the near future.

The global trend toward increased manufacturing of scaled-CMOS in foundries has had an impact on semiconductor manufacturing conferences during the past few years. New conferences have been created in some geographical areas and attendance has suffered in other areas. The Semiconductor Manufacturing Committee worked with the EDS Vice-President of Meetings and SEMI, as well as with sponsored-conference committees, on plans to adjust the schedules and locations of several conferences. In addition, committee members have been involved in organizing conference sessions, including at the International Symposium on Semiconductor Manufacturing (ISSM), the Advanced Semiconductor Manufacturing Conference (ASMC), the AVS International Symposium, the European Advanced Equipment Control/Advanced Process Control Conference (European AEC/APC), and the International Conference on Frontiers of Characterization and Metrology for Nanoelectronics (ICFCMN). The latter is a bi-annual conference which will be next held in Grenoble, France in May, 2011. The next European AEC/APC Conference will be held in Dresden, Germany in April, 2011. So, spring will be a great time for those interested in semiconductor manufacturing to visit Europe!

Stimulating publication, especially in the IEEE Transactions on Semiconductor Manufacturing (TSM) has also been a continuing activity of the committee. In particular, we have had some success in encouraging authors of selected papers presented at the AEC/APC, ICFCMN, ISSM, and ASMC conferences to write more detailed versions for publication in the TSM. Note that the TSM has now been converted to using IEEE ScholarOne for manuscript submission and review. Papers can now be submitted online at http://mc.manuscriptcentral.com/tsm-ieee. This has also helped enable fast access to accepted papers on IEEE Xplore, which now become available online as soon as accepted and finalized, prior to the quarterly publication of the print journal.

Another publication activity in which several of our committee members have been leaders for many years is the International Technology Roadmap for Semiconductors (ITRS). As you read this, the 2010 ITRS update documents will have just been completed and posted on the website www.itrs.net. The ITRS represents a worldwide industry consensus on targets for the continuing advance of semiconductor circuit, device and manufacturing technologies. Over the past 18 years, the ITRS scope has been continually broadened and, today, addresses a lot more than "CMOS scaling." Much of the new scope is now collectively referenced as "More than Moore." For example, the theme of the recently-held 2010 ISSM was "Innovative Manufacturing for 'More than Moore' and New Power Era." As part of this trend, we anticipate that the ITRS will continue to expand in topics related to analog devices and their manufacturing.

Robert R. Doering
EDS Semiconductor Manufacturing Technical Committee Chair
Texas Instruments, Inc.
Dallas, TX, USA

2010 PVSC William R. Cherry Award Winner

William R. Cherry Award

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

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

composed of past PVSC chairpersons and past recipients of the award.

Richard R. King

Richard R. King was born in Chapel Hill, North Carolina in 1960. Dr. King is currently Principal Scientist responsible for Photovoltaic Cell R&D at Spectrolab, Inc. His research on photovoltaics over the last 25 years has explored high-efficiency solar cells in a number of semiconductor materials systems, from silicon, to the GaInP, GaInAs, and germanium subcells in III-V multijunction cells. Dr. King's solar cell research led the emergence of III-V multijunction concentrator cells as the photovoltaic technology with the highest and most rapidly rising efficiency, helping to enable the recent growth of the concentrator photovoltaics industry, which now primarily uses this type of solar cell.

In his Ph.D. research at Stanford University, Dr. King worked to develop high-efficiency one-sun back-contact silicon solar cells, and his characterization studies of minority-carrier recombination at the doped Si/SiO_2 interface are still in use today for high-efficiency silicon solar cell design. At Spectrolab, his research has contributed to understanding of metamorphic III-V materials lattice-mismatched to the growth substrate; group-III sublattice ordering in GaInP; minority-carrier recombination at III-V heterointerfaces; wide-band-gap tunnel junctions; high-efficiency GaInP/GaInAs/Ge triple-junction solar cells; dilute nitride materials such as ~1-eV GaInNAs solar cells; and multijunction solar cells formed by wafer bonding dissimilar materials such as III-V semiconductors and silicon. Dr. King's work has emphasized the juncture between materials science and solar cell recombination physics, throwing light on theoretical performance limits, energy generation, and experimental demonstration of future high-efficiency solar cell designs, such as 4-, 5-, and 6-junction solar cells.

At Spectrolab, Dr. King is principal investigator of Spectrolab's Air Force Research Laboratory Next-Generation Solar Cell (AFRL Next-Gen) program, which led to the demonstration of the first space solar cells with over 30% AM0 efficiency, and developed the technology needed for the last 3 generations of space solar cells. He was principal investigator in charge of high-efficiency terrestrial concentrator cell development in Spectrolab's High Performance Photovoltaics (HiPerf PV) program from the National Renewable Energy Laboratory (NREL), and over the years has built a team of top-notch solar cell researchers at Spectrolab.

Dr. King led Spectrolab's development of III-V multijunction cell structures resulting in new heights in solar cell efficiencies, recognized with R&D 100 awards in 2001 and 2007, and a Scientific American 50 award in 2002. In 2006, this work led to a record 40.7%-efficient metamorphic 3-junction terrestrial concentrator cell, the first solar cell of any type to reach over 40% efficiency. Dr. King and his research team have since produced a 41.6%-efficient 3-junction GaInP/GaInAs/Ge cell, another step in a long series of record solar cell efficiencies. As part of his strong interest in furthering public and scientific awareness of photovoltaics, Dr. King has helped organize a number of international conferences, serving as Program Chair for the 4th International Conference on Solar Concentrators (ICSC-4) in 2007, and the 35th IEEE Photovoltaic Specialists Conference (PVSC-35) in 2010. Dr. King was inducted into the Space Technology Hall of Fame in 2004, and has 12 patents and over 100 publications on photovoltaics and semiconductor device physics.

John D. Meakin
Consultant
Weybridge, VT, USA

Call for Nominations – IEEE Fellow Class of 2012

IEEE Fellow is the highest grade attainable in the IEEE organization. It is also a level that is not automatic, you must be nominated. The Fellow program recognizes outstanding work and achievement in one of the many designated fields or interests. These Fellows are the visionaries, the pioneers and technology leaders in their field as well as having worldwide influence. This prestigious group now numbers over 6,000 out of nearly 400,000 of IEEE's total membership.

If you know of an IEEE colleague who is a Senior Member or Life Senior Member in good standing, has completed five years of service in any grade of IEEE Membership and who has made an outstanding contribution to the electronic or electrical engineering profession in any of the IEEE fields of interest, you can nominate this person in one of four categories: Application Engineer/Practitioner, Educator, Research Engineer/Scientist or Technical Leader.

Nominations for the Fellow Class of 2012 are now being accepted and use of the on-line application form is highly suggested. It is also strongly recommended that the Nominator read the "Before Submitting Your Fellow Nomination" section which will help with the process.

To nominate an IEEE Senior member of IEEE Life Senior Member or to learn more about these categories, the Fellow program in general and the application process, visit the IEEE web site at http://www.ieee.org/fellows. The deadline for nominations is 1 March 2011.

The 2010 iNEER Achievement Award

Professor Emeritus Herzl Aharoni was honored on July 21, 2010, with the 2010 iNEER Achievement Award, presented by the international advisory board of the International Network for Engineering Education and Research (iNEER). iNEER is a global volunteer networking, professional organization formed by the world engineering community to promote mutual progress in teaching and learning through international cooperation. iNEER helps in developing international understanding and partnership through information sharing and networking. The widening iNEER network of educators and researchers covers 98 countries, and is linked through the iNEER website, archival publications, electronic communication system and various conferences, workshops, and retreats.

Professor Emeritus Herzl Aharoni (left), awarded the 2010 iNEER Achievement Award by Prof. Tomas Cermak, Chair of the iNEER Board (right)

The citation on the award engraved plaque states that the award is granted to Professor Aharoni: "*For his Contribution in New Knowledge Creation through Innovative International Educational and Scientific Collaboration with Academic and Research Institutions*."

The international collaboration record of Professor Aharoni for which he received the award is most impressive and diversified. It is realized mainly through two avenues. His first and most important contribution is made in this regard through sharing his vast educational and scientific experience with overseas undergraduate and graduate students as well as with young researchers and fellow collaborators, for extended periods of time. This is done through an extensive international collaboration with academic and research institutions abroad. He is repeatedly invited to provide them with his educational and research expertise both which are well recognized. His cooperation with them proved to be beneficial for both sides since it comprises knowledge that he creates and acquires there, and brings it back to Israel, thus promoting mutual teaching and research international cooperation. Out of his thirty-eight years at Ben-Gurion University, he spent there well over thirteen years through long term recurring visits, performing considerable educational and research activities in Japan, U.S.A., South Africa, Canada and Belgium. This exchange was done in accordance with Ben-Gurion University international cooperation policy. In his work abroad he implemented his educational philosophy of providing the undergraduate students with tools that will enable them to follow the rapid changes in electronics in the years to come after their graduation, and guiding graduate students and young researchers towards skills development for the creation of new knowledge. The second avenue is through his membership and activities in seven major international engineering and scientific societies.

In addition to the 2010 iNEER Achievement Award, Professor Aharoni received a U.S NRC-NASA research associateship award for performing research at the JPL, Pasadena, California, USA (1979/80). He was appointed a Distinguished Research Professor at Rand Afrikaans University in 1990. He received the research prize of Ben-Gurion University for 1998, for research contributions in applied electronics, on the subject of "Chemical Vapour Deposition (CVD) of silicon-germanium heteroepitaxial structures", donated by the Polish-Jewish Exservicemen's Association of London. He supervised a research and co-authored a student paper that received the "Young Researcher Award" (SSDM 2000 conference, Japan). Professor Aharoni is an IEEE Distinguished Lecturer (2003). He received the Certificate of Recognition and Appreciation – by the IEEE Electron Device Society, "*For valued contributions as EDS Distinguished Lecturer*," awarded by the President of the IEEE Electron Device Society, in December 2009. He also appears in the IEEE "2007 Golden List of Reviewers." Professor Aharoni's contributions to the advancement and development of engineering education in the ECE department are substantial and well appreciated. He is an excellent teacher, very popular with the students who regularly fill his classroom. He constantly receives the highest marks at the students quality of teaching surveys conducted at BGU. He has received eight teaching awards at BGU, two BGU

awards presented by the university Rector as a "Best Teacher" at the Faculty of Engineering in 1987 and in1988, an "Esteemed Teacher" citation from the Students' Association of Ben-Gurion University for 1988/89 and three "Excellence in Teaching Award" presented by the dean of the Faculty of Engineering for 2004, 2005 and for 2006. He also received two "Outstanding Teaching Award" for 2005 and for 2006 presented by the President and Rector of BGU. This award was granted to Professor Aharoni "*In honor of his work in pursuit of the advancement of teaching, and contribution to the enhancement of the reputation of the university as a center of academic excellence of the highest degree, for the benefit of future generations earnestly seeking knowledge and science*." Professor Aharoni is a Fellow (2003) of the Institution of Engineering and Technology, (IET, formerly IEE) and a Fellow (2005) of the Institute of Physics (IOP). He is also a Fellow (2007) of the American Physics Society (APS), which was awarded to him for his "*Pioneering contributions to the invention, research, and development of two-and multi-terminal Single Crystal Silicon Light Emitting Devices (SiLEDs) for all-silicon integrated optoelectronic systems, combining semiconductor physics and standard IC technology.*" Professor Aharoni is a Senior Member (1999) of the Institute of Electrical and Electronic Engineers (IEEE). He is a member of the International Society for Optical Engineering (SPIE), the Optical Society of America (OSA) and the American Vacuum Society (AVS). He is also a member of the Israel Association for Crystal Growth, Israel Vacuum Society (IVS) and Israel Physical Society (IPS).

Professor Aharoni continues his regular academic activities at the ECE dept. of BGU as a Professor Emeritus. During 34 years of his regular employment (pre-retirement) at Ben-Gurion University, he served, in addition to his regular teaching duties, in a wide range of capacities in and out the university. The specialization field of Professor Aharoni is teaching and research of the physics and technology of semiconductor based solid state electronic and optoelectronic materials and devices. He focuses on new processing development in microelectronics, and has been working on diversified subjects in this area.

EDS Awards Committee

Announcement of the 2010 EDS Ph.D. Student Fellowship Winners

Meyya Meyyappan

Agis Iliadis

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

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

EDS proudly announces three 2010 EDS Ph.D. Student Fellowship winners. Brief biographies of the recipients appear below. Detailed articles about each Ph.D. Student Fellowship winner and their work will appear in forthcoming issues of the EDS Newsletter.

Jing Zhuge received a B.S. degree in Physics from School of Physics, Peking University, Beijing, China in 2006. She is pursuing her Ph.D. degree in Microelectronics and Solid-State Physics at the Institute of Microelectronics, Peking University, under the supervision of Prof. Yangyuan Wang and Prof. Ru Huang. Her research interests include the simulation and optimization of nano-scaled CMOS devices, and the experimental characterization on low frequency noise and variability, with a particular focus on gate-all-around silicon nanowire transistors.

From November 2009 to August 2010, she was a visiting researcher at the NCAIS group of IMEC, supported by the China Scholarship Council. Her project at IMEC is on the design and optimization of Tunnel FETs for low power applications, under the guidance of Prof. Guido Groeseneken and Dr. Anne S. Verhulst.

Jing Zhuge has authored or coauthored 23 papers in international technical journals and conferences. She has been an IEEE Student Member since 2006.

Guruprasad Katti received the B.E. degree in electrical engineering from A.C. Patil College of Engineering, University of Mumbai, Mumbai, India, and the M.S. degree in electrical engineering from the Indian Institute of Technology – Madras, Chennai, India, in 1999 and 2002 respectively. He is currently pursuing a Ph.D. at IMEC and Katholieke Universiteit Leuven (KUL). His thesis deals with the Electrical Modeling of Through Silicon Via (TSV) and analyzes the impact of TSV on 3D Circuits and Systems. Prior to joining the Ph.D. program he worked with GE-Global Research and National Semiconductor, Bangalore, India. He has authored and co-authored more than 20 publications in international journals and conferences. During the course of his career he developed expertise encompassing the areas of VLSI technology, semiconductor device modeling, VLSI CAD/EDA tools in addition to a fair bit of VLSI digital design experience. His research interests include semiconductor device modeling, IC interconnects, novel device structures and 3-D ICs.

Can Bayram was born in Izmir, Turkey. He received the B.S. degree in 2005 from Bilkent University, Ankara, Turkey, in electrical engineering. He is currently a Ph.D. candidate under the supervision of Prof. Manijeh Razeghi in Electrical Engineering and Computer Science Department of Northwestern University, IL, USA. He works on developing energy-efficient environmental semiconductor devices including ultraviolet detectors, visible light emitters, and quantum electron devices, as well as particularly investigates wide band gap semiconductors (AlGaInN and ZnO) in pursuit of terahertz wavelength optoelectronic devices. He has more than 47 scientific contributions including 24 journal papers. He is a reviewer of high impact journals such as Applied Physics Letters and Optics Express, and a member of IEEE, SPIE, OSA, MRS, APS, AAAS, ECS, IOP and ICDD. He is currently an IBM and Link Foundation Energy Fellow working at Center for Quantum Devices of Northwestern University.

Meyya Meyyappan
EDS Vice-President of Educational Activities
NASA Ames Research Center
Moffett Field, CA, USA

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

EDS Distinguished Lecturer Program

The EDS Distinguished Lecturer Program exists for the purpose of providing EDS Chapters with a list of quality lecturers who can potentially give talks at local chapter meetings. To arrange for a lecture, the EDS chapters should contact the individual directly. A general guideline for the visit, but not the absolute rule, is that the lecturer should be able to include the meeting site with an already planned travel schedule at a small incremental cost to the travel plan. Alternatively, a prior coincident travel plan would not be required if the lecturer is already located within an approximate fifty mile radius of a meeting site. Although the concept of the program is to have the lecturers minimize travel costs by combining their visits with planned business trips, EDS will help subsidize lecturer travel in cases where few/no lecturers will be visiting an area and/or a chapter cannot pay for all the expenses for a lecturer trip.

For more information on the Program or for a listing of distinguished lectures, please visit the EDS website at http://eds.ieee.org/distinguished-lecturers.html or contact the EDS Executive Office (l.riello@ieee.org).

2011 IEEE EDS PhD Student Fellowship Call for Nominations

Description: One year fellowships awarded to promote, recognize, and support PhD 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.

It is expected that three fellowships will be awarded, with the intention of at least one fellowship being given to eligible students in each of the following geographical regions every year: Americas, Europe/Middle East/Africa, and Asia & Pacific. Only one candidate can win per educational institution.

Prize: US$5,000 to the student and if necessary funds are also available to assist in covering travel and accommodation costs for each recipient to attend the EDS Administrative Committee meeting for presentation of the award plaque. The EDS Newsletter will feature articles about the EDS PhD Fellows and their work over the course of the next year.

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

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

Nomination Package

- Nominating letter by an EDS member
- Two-page (maximum) statement by the student describing his or her education and research interests, accomplishments and graduation date
- One-page biographical sketch of the student (including student's mailing address and email address)
- One copy of the student's under-graduate and graduate transcripts/grades. Please provide an explanation of the grading system if different from the A-F format.
- Two letters of recommendation from individuals familiar with the student's research and educational credentials. Letters of recommendation can not be from the nominator.

Timetable

- Nomination packages are due at the EDS Executive Office no later than May 15, 2011
- Recipients will be notified by July 15, 2011
- Monetary awards will be given by August 15, 2011
- Formal presentation of the awards will take place at the EDS Administrative Committee Meeting in December 2011.
- 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

2011 IEEE EDS Masters Student Fellowship Call for Nominations

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

Three 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, accomplishments and graduation date.
  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, 2011
- Recipients will be notified by May 15, 2011
- 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

The Pulsed Power Conference honors professional contributions to the field of Pulsed Power with three award categories:

- The Erwin Marx Award recognizes outstanding contributions to pulsed power technology by an individual over an extended period of time.
- The Peter Haas Award recognizes outstanding contributions to pulsed power technology resulting from an individual's continued efforts to develop programs of research, education, and information exchange that are the basis for progress in pulsed power.
- To recognize outstanding contributions as a student in pulsed power engineering, science or technology. We are seeking nominations for the 2010 and 2011 Arthur H. Guenther Pulsed Power Student Awards.

Nomination forms can be found at http://ew.ieee.org/soc/nps/tc-ppst.html

Ian. D. Smith
Chair, Conference Awards Committee
L-3 Communications Pulse Sciences
San Leondro, CA, USA

EDS Distinguished Lecturer Visits the ED/SSC Bangalore Chapter

Jayasimha Prasad, IEEE Fellow and EDS Distinguished Lecturer, visited the ED/SSC Bangalore Chapter, July 30, 2010. The meeting was held in the Electrical Communication Engineering Department at the Indian Institute of Science, Bangalore. Dr. Prasad was hosted by Prof. Navakanta Bhat and was given a tour of the Center of Excellence in Nanoelectronics (CEN). He also visited the new building under construction, where the Indian Nanoelectronics User Program (INUP) will be located. After the visits, Dr. Prasad gave an excellent presentation on "High Frequency Characterization of Transistors." As CMOS devices continue to scale, the high-frequency figures of merit for CMOS devices have reached several hundred GHz. People are now looking for analog and microwave applications in CMOS. The high frequency figures of merit such as Ft, Fmax and Noise Figure are becoming very important. The lecture by Prasad focused on how to measure Ft and Fmax of both MOS and bipolar devices. This was a very useful and timely topic.

EDS Distinguished Lecturer, Jayasimha Prasad, speaking at the ED/SSC Bangalore Chapter

Dr. Prasad gave a brief introduction to S-parameters and the Smith Chart so that everyone in the diverse audience could follow the talk. He then spoke on the vector network analyzer, measurement, calibration and de-embedding using test structures; continuing the discussion with extraction of Ft and Fmax from measured S-parameters. Stability becomes an important issue whenever maximizing the gain from the device. Prasad described stability factor and the various definitions of gain, namely, Maximum Available Gain (MAG), Maximum Stable Gain (MSG) and Mason's Unilateral Gain (U). He discussed how they influence the extraction of Fmax. He showed that Mason's Gain is independent of the device configuration and is always stable. Later, Prasad showed how to extract the series resistances and capacitances of the device from the S-parameters. Everyone enjoyed this very informative talk, which was well attended by students, faculty and engineers from other companies.

Vavakanta Bhat
ED/SSC Bangalore Chapter
Bangalore, India

Congratulations to the 22 EDS Members Recently Elected to IEEE Senior Member Grade!

Ibrahim Bin Ahmad*	John Harris	Santanu Mahapatra	Koji Sakui
Shoou Jinn Chang*	Taeksoo Ji	Yutaka Nonomura	Thomas Vogelsang
Sagnik Dey*	Quanxi Jia*	Nathaniel Peachey*	Gim Soon Wan
Zhaoyun Duan	Stefan Koch	Bernard Pietrucha	Kin-Yip Wong
Ergun Ercelebi	Lijie Li	Rudiger Quay	
Reza Ghodssi*	Yu-Ming Lin	Robert Reed	

* = 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

Report on the 24th WIMNACT in Singapore and 25th WIMNACT in Perth, Canberra, and Melbourne

The Joint 24th Workshop and IEEE EDS *Mini-colloquium* (MQ) on NAnometer CMOS Technology (WIMNACT) in Singapore, and the 25th WIMNACT in three cities in Australia, MQ-1 in Perth, MQ-2 in Canberra, and MQ-3 in Melbourne, were successfully held, July 26, 28, 30, and August 2, respectively. The week-long event was co-organized by the Rel/CPMP/ED Singapore Chapter, the Western Australia (WA) Section ED/SSC/Photonics Chapter, the Australian Capital Territory (ACT) Section ED/Photonics Chapter, and the Victorian Section ED/Photonics Chapter. Four Distinguished Lecturers (DLs) participated in the workshops: Prof. Juin Liou of the University of Central Florida (UCF), Prof. Kin-Leong Pey of the Singapore University of Technology and Design (SUTD), Prof. Ramgopal Rao of the Indian Institute of Technology Bombay (IIT-B), and Prof. Xing Zhou of the Nanyang Technological University (NTU). The joint WIMNACT was financially sponsored by EDS with co-sponsorships from the four Chapters as well as the WA and ACT Sections.

The four DL talks covered a wide range of topics: "*Electrostatic Discharge (ESD) Challenges in Modern and Future Integrated Circuits*" by Prof. Liou, "*New Insight of Resistive Switching in MIS Nano-scale*

The 24th WIMNACT in Singapore, July 26, 2010. (right to left) X. Zhou, A. Tay, J. J. Liou, N. Singh, R. Rao, K. L. Pey, and Y. Yu

The 25th WIMNACT, MQ-1 in Perth on July 28, 2010 (left to right) G. Umana-Membreno, X. Zhou, K. L. Pey, R. Rao, J. J. Liou, A. Osseiran, and L. Faraone

The 25th WIMNACT, MQ-2 in Canberra on July 31, 2010. (Front from left to right) R. Rao, K. L. Pey, J. J. Liou, H. Tan, and X. Zhou.

The 25th WIMNACT, MQ-3 in Melbourne on August 2, 2010. (front row, left to right) X. Zhou, K. L. Pey, M. Premaratne, J. J. Liou, and R. Rao

Devices" by Prof. Pey, "*More Than Moore Era: Convergence of Bio-Nano-Information Technologies*" by Prof. Rao, and "*Unification of MOS Compact Models with the Unified Regional Modeling Approach*" by Prof. Zhou. Each MQ began with an introduction to the IEEE Electron Devices Society by Prof. Liou, the EDS Vice-President for Regions/Chapters.

The Singapore MQ was hosted by the ECE Department of the National University of Singapore (NUS), coordinated by Prof. John Thong of NUS, and held at NUS, July 26th. The event had 5 speakers: 3 DLs (Profs. Liou, Pey, and Rao) and joined by 2 local speakers: Dr. Navab Singh of the Institute of Microelectronics (IME), who gave a talk entitled "*Silicon Nanowire Technology and Devices for CMOS Based Nanoelectronics and Beyond*," and Prof. Hongyu Yu of NTU, who presented a talk on "*Graphene-Metal Junction: the Impact of Process Induced Defects and the Asymmetric Transportation Behavior*." There were more than 30 attendees at the workshop. At the end of the MQ, Prof. Andrew Tay of NUS, the Chapter Chair, presented tokens of appreciation to the speakers and hosted a dinner for them.

The Perth MQ was hosted by the University of Western Australia (UWA) and held at UWA on July 28th, attended by more than 20 faculty and students. Besides the talks by the DLs from overseas, Prof. Lorenzo Faraone of UWA, who is also an EDS DL, presented a talk on "*Optical MEMS for Multi-Spectral Infrared Sensors and Arrays*." Prof. Gilberto Umana-Membreno of UWA gave a talk entitled "*Mobility Spectrum Techniques for Determining Carrier Transport in Advanced Nanoelectronic Structures*." After the MQ, Prof. Faraone conducted a tour of the labs at UWA for the EDS delegation. Prof. Adam Osseiran of Edith Cowan University, the Chapter Chair, and Prof. Faraone co-hosted a dinner sponsored by the IEEE WA Section.

The Canberra MQ was hosted by the Australian National University (ANU) and held at ANU on July 31st, for a full-day program with participation by 7 local speakers from ANU and more than 40 attendees. They were Dr. Simon Ruffell on "*Nanoindentation for patterning and processing of silicon*," Dr. Qiang Gao on "*Epitaxy of III-V Nanowires for Optoelectronic Applications*," Dr. Steve Madden on "*Glassy Nonlinear Planar Optical Waveguides and Devices*," Prof. Andres Cuevas on "*Surface Passivation for Silicon Solar Cells*," Dr. Jennifer Wong-Leung on "*Ion Implantation Effects in Silicon Carbide*," Dr. Dinesh Venkatachalam on "*Effect of Irradiation on Resistive Switching Response of Nickel Oxide Thin Films*," and Dr. Fouad Karouta on "*Influence of the Structural and Compositional Properties of PECVD Silicon Nitride in Fabrication of an 11.9 W AlGaN/GaN HEMT at 4 GHz*." After the MQ, the EDS delegation visited the labs in the Research School of Physics and Engineering at ANU, followed by a dinner hosted by Prof. Hoe Tan of ANU, the chapter chair, sponsored by the IEEE ACT Section.

The Melbourne MQ was hosted by the Monash University (MU) and held at MU on August 2nd, which was also publicized at the IEEE Victorian Section website (www.ieee-vic.org). About 15 students attended the workshop. After the MQ, Prof. Malin Premaratne, the chapter chair, hosted a lunch for the DL speakers and they discussed ways to promote ED-related activities in the region.

The joint WIMNACT, being the 24th and 25th of the well-established WIMNACT series, was a very successful one for promoting

ED-related activities. The joint ED chapters in Australia have all been very active in photonics-related activities, and the visit by the EDS delegation brought scholarly exchange among professional colleagues and students. This should help promote more ED-related activities in Australia. The complete information on the joint WIMNACT event, including links to the history of past WIMNACTs, can be found at the website: http://www.ntu.edu.sg/eee/eee6/conf/WIMNACT10.htm

Xing Zhou
EDS SRC-AP Chair and
Joint WIMNACT Organizer

Andrew Tay
Rel/CPMT/ED Singapore
Chapter Chair

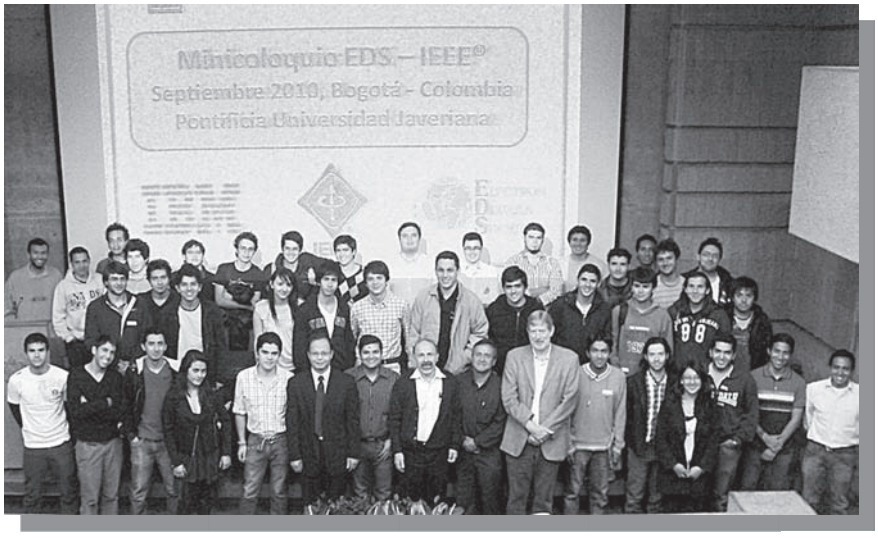
Adam Osseiran
Western Australia Section ED/SSC/
Photonics Chapter Chair

Hoe Tan Australian
Capital Territory Section
ED/Photonics Chapter Chair

Malin Premaratne
Victorian Section ED/Photonics
Chapter Chair

Report on the EDS Mini-Colloquium Held in Bogota, Colombia

The ED Colombia Chapter, recently established in 2008, is continuing to strengthen its presence in Colombia's growing academic and industrial sectors. The chapter's latest activity was to organize a very successful ED Mini-Colloquium, which was held during September 13–14, 2010, at "Pontificia Universidad Javeriana" in the capital city of Bogotá. This event was part of the university's 50th anniversary celebration of its Electrical Engineering Department. The event offered a wealth of knowledge and information by hosting seven internationally renowned distinguished lecturers, including two local speakers, as well as representatives from industry and academia. The speakers presented topics on several fields of EDS interest. Prof. German Yamhure, Chair of ED Columbia, began the meeting with a presentation on EDS and its global and local activities. Dr. César A Gonzales, IBM Fellow Global Research Electronics Executive, followed with a talk on IT and wireless convergence. Dr. Jacobus W. Swart, of Brazil's CTI and Universidade Estadual de Campinas, Brazil, spoke on design, fabrication and applications of MEMS. Prof. Henry A. Méndez Pinzón, from Pontificia Universidad Javeriana discussed the development of organic polymer-based diodes and the characterization of their optoelectronic properties. Prof. Juan Carlos Salcedo, also from Pontificia Universidad Javeriana, talked about growth and optical characterization of SiO_2 colloidal crystals. Prof. Juin J. Liou, EDS Regions/Chapters Vice-President, presented a lecture about advanced on-chip electrostatic discharge protection solutions in CMOS/BiCMOS technologies. Dr. Ravi M. Todi, from the IBM Research and Development Center, covered some advanced CMOS process integration topics looking beyond conventional scaling. Finally, Dr. Fernando Guarín, also from IBM Microelectronics Research and Development Center, discussed several semiconductor reliability topics for advanced CMOS technologies. The event was fully funded, organized and supported by EDS and the Pontificia Universidad Javeriana. The total attendance was in excess of 120 students, faculty members and professionals.



Participants of the EDS Mini-Colloquium in Bogotá, Colombia

German Yamhure
ED Colombia Chapter Chair
Pontificia Universidad Javeriana
Bogota, Colombia

Report on the EDS Mini-Colloquium Held in Guangzhou, China

The ED Guangzhou Chapter hosted this year's second mini-colloquium July 10th in the China CEPREI Lab. About 30 academic staff from CEPREI and local university graduate students attended this event. Presentations and invited seminars related to microelectronics reliability were given by four lecturers, including two EDS Distinguished Lecturers. Highlights of the seminars:

Mini-Colloquium held at China CEPREI Lab, Guangzhou, China, July 10, 2010

Distinguished Lectures, Professors Jiann-Shiun Yuan and Cher Ming Tan at the ED Guangzhou Chapter, July 10, 2010

- "CMOS Device and Circuit Reliability," presented by Prof. Jiann-Shiun Yuan, University of Central Florida, USA.
- "New Driving Force for Electromigration in ULSI Interconnections and its implication to IC layout," by Prof. Cher Ming Tan, Nanyang Technological University, Singapore.

Two other presentations, entitled "NBTI Degradation and its Impact for CMOS Circuit Reliability" and "The Development of Known Good Die (KGD), Bare Die Burn-in & Screening Technology," given by Prof. Bin Lin of South China University of Technology and Prof. Yun Huang from China CEPREI Lab, China, respectively.

Kong Xuedong
ED Guangzhou Chapter Chair
China CEPREI Lab
Guangzhou, China

Report on the EDS Mini-Colloquium Held in Shanghai, China

The ED Shanghai Chapter organized a mini-colloquium in Shanghai, China on November 1, 2010. The following four speakers were invited to give EDS Distinguished Lectures: Prof. C. T. Sah of CTSAH Associates, USA; Prof. H. Iwai of Tokyo Institute of Technology, Japan; Prof. C. Yang of Santa Clara University, USA; and Prof. J. J. Liou of University of Central Florida, USA. Unfortunately, Professor Sah had a medical condition prior to the MQ and thus could not deliver his talk. Professors Iwai, Yang, and Liou spoke on topics including CMOS scaling, carbon nanotube modeling, and electrostatic discharge protection design. Over 60 people attended the mini-colloquium.

EDS Distinguished Lecturers (3rd, 4th and 5th from left), C. Yang, H. Iwai and J. Liou, after the successful conclusion of the Shanghai MQ

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

Regional and Chapter News

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

2011 Device Research Conference

Each year the Device Research Conference brings together leading scientists, researchers, and graduate students from varied disciplines in academia and industry to share their latest research and discoveries in the field of electron devices. The 69th annual DRC will be held June 20–22, 2011, at the University of California, Santa Barbara. The university setting of the conference encourages open technical discussion on recent breakthroughs and advances in device research, and provides a great atmosphere for social events. The technical program is comprised of invited, oral, and poster presentations. The conference will hold three evening rump sessions aimed at engaging the audience in vigorous discussions on important challenges and questions facing the device research community. Additionally, the Device Research Conference has a tradition of strong graduate student participation. To encourage student submission, the conference offers reduced registration and travel support for students, and a Best Student Paper Award.

The Device Research Conference is coordinated with the Electronic Materials Conference which will be held during the same week, June 22–24. This coordination recognizes the close relationship between device and electronic materials research and provides for fruitful exchange of information between attendees of both conferences.

ED Orange County

–by Héctor J. De Los Santos

The IEEE ED Orange County Chapter was honored on April 29, 2010 to have Dr. Anu Kaul from Jet Propulsion Labs, California Institute of Technology, give a seminar entitled "Carbon-based nanomaterials for electronics and optical applications." Anu Kaul is a Senior Member of the Technical Staff at the Jet Propulsion Labs, where she is leading the development of nanoscale materials and devices for nanoelectronics and nanophotonics applications. She obtained her M.S. and Ph.D. from UC Berkeley. Prior to JPL she held research positions at Motorola Labs and has also been an R&D Engineer at Hewlett-Packard. Her seminar described work conducted at the JPL in developing nano-electronic devices based on carbon-based nanomaterials for three application areas: 1) Nano-electro-mechanical (NEM) switches and resonators; 2) physical sensors, and 3) optical absorbers. Such devices are under consideration for extreme environment electronics for planetary missions, miniaturized sensors as interfaced with vacuum micro-cavities for high-frequency vacuum electronics, as well as broadband optical absorbers operational from the UV-to-IR. The microelectronics industry based on Silicon (Si) continues to push the limits on scaling, which has created unique opportunities for nanoscale materials, such as carbon nanotubes (CNTs) and carbon nanofibers (CNFs).

For additional information contact Héctor J. De Los Santos at nanomemsllc@aol.com.

Dr. Anu Kaul giving a seminar at the Orange County EDS Chapter

ED Santa Clara Valley

–by Prasad Chaparala

The IEEE ED Santa Clara Valley Chapter was honored on August 10, 2010, to have Prof. Krishna Saraswat from Stanford University give a seminar entitled "3-D ICs: Motivation, Performance Analysis, Technology and Applications." Prof. Saraswat is an IEEE Fellow and is the recipient of numerous awards including the Thomas Callinan Award from The Electrochemical Society in 2000 and the 2004 IEEE Andrew Grove Award. Special areas of his interest are: new device structures to continue scaling MOS transistors, DRAMs and flash memories to nanometer regime, 3-dimentional ICs with multiple layers of heterogeneous devices, ultrathin MOS gate dielectrics, and metal and optical interconnections. Prof. Saraswat discussed his work on three-dimensional integrated circuits (3D-ICs). By stacking

Prof. Krishna Saraswat

devices vertically, it is expected that (1) more functionality can fit into a smaller space and (2) the signal delay and power consumption in the interconnect layers will decrease and bandwidth will increase. His review analyzed the limitations of the existing device and interconnects technologies and presented an alternative 3-D chip design strategy that exploits the vertical dimension to alleviate these problems and to facilitate SoC applications. A comprehensive analytical treatment of the 3-D ICs was presented and he showed how by simply dividing a planar chip into separate blocks, each occupying a separate physical level interconnected by short and vertical inter-layer interconnects, significant improvement in performance and reduction in wire-limited chip area can be achieved, without using any other circuit or design innovations. Furthermore, one of the major concerns in 3-D ICs arising due to increased power density has been analyzed. It was demonstrated that advancement in heat sinking technology will be necessary in order to extract maximum performance from these chips. Finally, some of the promising technologies, (chip stack packaging, wafer bonding, layer transfer, crystallization, epitaxial growth, etc.) for manufacturing 3-D ICs were outlined.

For additional information, contact Dr. Chaparala at prasad.chaparala@nsc com.

ED Central Texas

–by Thuy Dao

The IEEE ED Central Texas Chapter was honored on July 10, 2010, to have Prof. Bruce White from Binghamton University, give a seminar entitled "Flexible Thermoelectric Energy Generation." Dr. White's research interests are in the areas of carrier transport in nanostructures, lattice vibrations of nanostructures, and development of novel electron devices for information processing and energy generation. Prof. White previously was a distinguished member

Prof. Bruce White

of the technical staff and manager of CMOS Research and Development, Freescale Semiconductor. His seminar discussed the development of efficient thermoelectric materials which could have a dramatic impact on the energy problems facing 21st century society. Thermoelectric materials on flexible substrates offer unique opportunities for scavenging energy through incorporation in building materials, for example window glass, or photovoltaic systems designed to scavenge photon energy across the entire spectrum of solar radiation. To develop such materials, significant improvements in the efficiency of thermoelectric materials is required. Moreover, the development of flexible thermoelectric materials for energy generation places an additional constraint on what has historically been a very difficult materials problem. He discussed opportunities to utilize the scattering of phonons at interfaces to disordered solids for generating such materials. In particular, his group has utilized phonon wavepacket molecular dynamics simulations to examine the transport of energy through thermoelectric nanostructures. The results indicate that opportunities exist to independently optimize the electronic structure of the thermoelectric nanostructure from that of its lattice vibrations.

For additional information, contact Thuy Dao at thuybdao@ieee.org.

~Adam Conway, Editor

ED Perú

–by Jorge Tejada

Distinguished Lecturer, Prof. Edval J. P. Santos, from the Devices and Nanostructures Laboratory of Universidade Federal de Pernambuco, Brazil, visited Perú in August 2010. He was invited by the Perú Chapter as a guest speaker for the XV International Engineering Congress, VISION 2010, held at San Martín de Porres University in the capital city of Lima. Prof. Santos presented two lectures on the subject of sensor fabrication and applications. The first lecture "Design and microfabrication of intelligent sensors for the oil and gas industry" was presented on August 17th and the next day he presented his second lecture, "Electronic measurement of alcohol content for quality control of Pisco," Perú's national spirituous beverage. Both lectures spurred considerable interest in the large audience of the conference. During his stay in Lima, Prof. Santos had the opportunity to meet on several occasions with Perú´s IEEE and Chapter members and officers, as well as students and faculty members from local universities, to promote and motivate local and international cooperative ED activities.

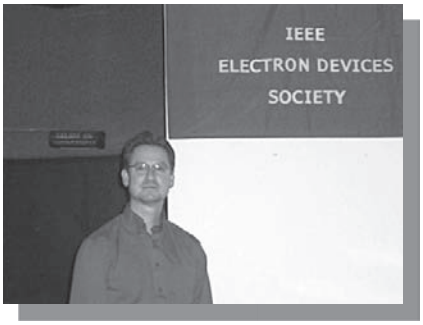
Distinguished Lecturer, Edval Santos, lecturing on sensor fabrication and applications at VISION 2010

ED Puebla

–by Claudia Reyes-Betanzo

The IEEE Puebla Section's Electron Devices and Circuits and Systems technical chapters jointly organized the "Second Seminar on

Puebla Seminar on Nanoelectronics and Advanced Design: Invited speakers and organizers (left to right) Dr. José Luis Ausín Sánchez, Dra. Claudia Reyes Betanzo, EDS Puebla Chairperson, Dr. Santiago Celma Pueyo, Dra. Ma. Teresa Sanz Pascual, CAS Member, EDS DL Dr. Rashid Bashir, and Dr. Stanislav Moshkalev



Puebla Seminar on Nanoelectronics and Advanced Design: EDS Distinguished Lecturer Prof. John Cressler

Nanoelectronics and Advanced Design 2010," which was successfully held at the National Institute for Astrophysics, Optics and Electronics (INAOE) in Tonantizintla, Puebla, México, May 19–21, 2010. The seminar consisted of six talks, two of them about nanotechnology contributed by the ED Puebla Chapter. On May 20th, EDS Distinguished Lecturer, Prof. Rashid Bashir of the University of Illinois at Urbana-Champaign, USA, lectured on the topic of "Silicon sensors for Biology and Medicine." The second EDS lecture titled "SiGe Technology: New Research Directions and Emerging Application Opportunities" was presented on May 21st by EDS Distinguished Lecturer, Prof. John Cressler from Georgia Institute of Technology, USA. The seminar was attended by about 110 participants from several universities in Puebla and nearby locations such as Veracruz and Mexico City. Participating students as well as faculty members from the different institutions actively participated in the discussions and expressed their satisfaction for the high level of these lectures.

ED Recife

–Edval J.P. Santos

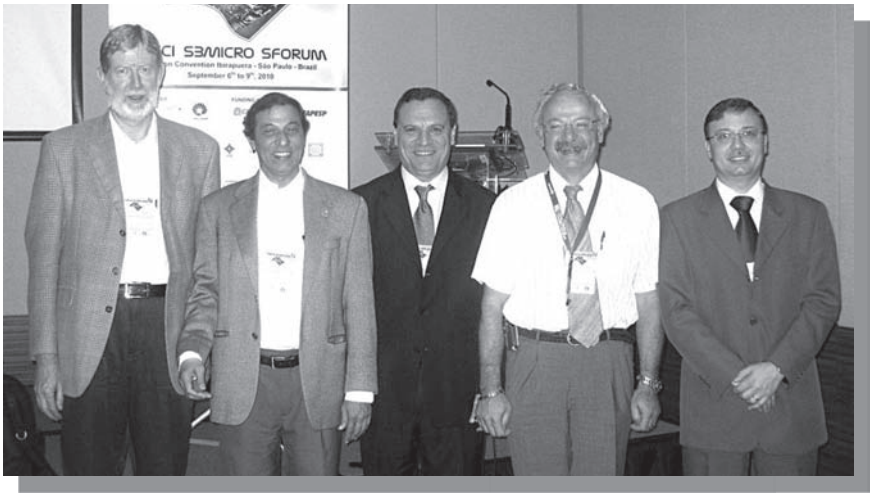
The ED Recife (Brazil) Chapter held its VIII Technical Meeting, September 3, 2010, at the CEEI Auditorium in Campina Grande, Brazil. The meeting started with a presentation of EDS global and local activities by Chapter Chair, Prof. Edval J. P. Santos. The technical program consisted of a lecture in the area of sensors given by Prof. Ian Andrew Glover from the Department of Electronic & Electrical Engineering, University of Strathclyde, Scotland, UK. The title of the lecture was: "Wireless sensor networks for animal tracking to support agricultural research." A group of researchers and students attended this meeting and engaged in dynamic idea exchanges with the guest lecturer. This meeting was immediately followed by the V Workshop on Electron Devices, on September 29, 2010, where Dr. Rakesh Kumar, Vice President of the IEEE Solid-State Circuits Society and President of TCX Inc., spoke on "Semiconductor Industry Trends, Challenges and Opportunities." Further information may be found at http://www.ieee-eds-recife.net/.

ED South Brazil

–by Joao Antonio Martino

Chapter activities during August and September 2010 were mainly focused

Some of the participants in the Recife Chapter's VIII Technical Meeting together with the Chapter's Chair, Prof. Edval J. P. Santos (4th from left) and the meeting's guest technical speaker, Prof. Ian Andrew Glover (5th from left)



SBMicro2010 – From left to right: Jacobus Swart (Region 9 EDS SRC Vice Chair), Subramanian Iyer (DL), Joao Antonio Martino (South Brazil Chapter Chair), Simon Deleonibus (DL) and Marcelo Antonio Pavanello

on supporting the organization of the 25th Symposium on Microelectronics Technology and Devices – SBMicro 2010, held in Sao Paulo, Brazil, on September 6–9, 2010. The General Chair of this conference was Prof. Dr. Joao Antonio Martino (USP, Brazil), and the Program Committee was chaired by Prof. Dr. Marcelo Antonio Pavanello (FEI, Brazil), both members of the South Brazil Chapter. The Symposium was organized by two Brazilian scientific societies: SBMicro (Brazilian Microelectronics Society) and SBC (Brazilian Computer Society) and was technically co-sponsored by EDS. Several tutorial presentations and invited talks were given during this event. Among them, two were EDS Distinguished Lecturers: Prof. Dr. Subramanian Iyer from IBM/USA imparted the tutorial "Three Dimensional Device Integration" and presented the invited talk "Impact of 3D Integration on Circuit Performance;" and Prof. Dr. Simon Deleonibus from CEA-LETI – MINATEC/France, imparted the tutorial "Advances in Nanotechnology and Microssystems" and presented the invited talk "Future Challenges and Diversifications for Nanoelectronics by the End of the Roadmap and Beyond."

Other prominent contributors were Dr. Eddy Simoen from IMEC/Belgium with the tutorial "CMOS Devices and Technology: From Micro to Nano Era" and the invited talk "High doping/high electric field effects on the characteristics of CMOS compatible p-n junctions;" and Dr. Bill Verzi from Agilent Technologies/USA, with the tutorial "Evaluating Sub-100 Nanometer Process Technologies." These tutorials were attended by over 100 people, many members of the South Brazil Chapter, and others from different regions of Brazil and other Latin American countries, USA and Europe.

~Francisco J. Garcia Sanchez, Editor

Europe, Middle East & Africa (Region 8)

ED Poland

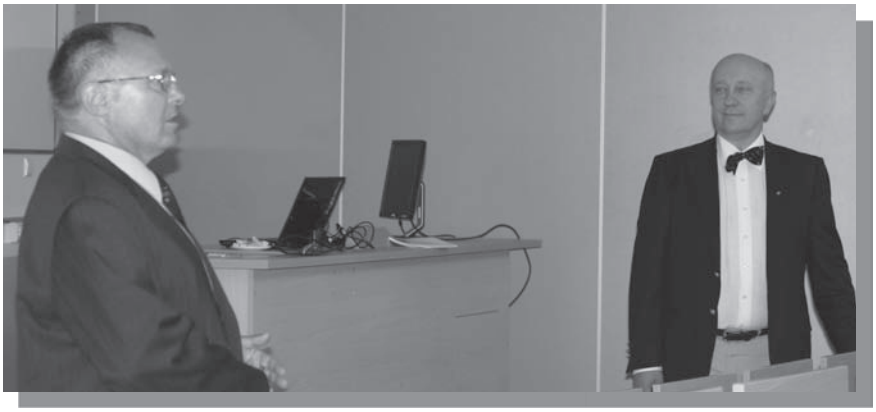
–by Zygmunt Ciota

On June 26, 2010, a joint meeting of the ED Poland Chapter and Section of Microelectronics from Committee of Electronics and Telecommunication of Polish Academy of Science was held in Wrocław, Poland. During the meeting, the project of the national design center of micro- and nano-systems based on Cadence facilities was discussed. Invited colleagues from Lisbon presented a possibility of a similar center existing already in Portugal.

The meeting was connected with a distinguished lecture by Prof. Werner Weber from Infineon Technologies, Germany. His lecture was entitled "Energy Saving by Power Electronics in Household and Car Applications."

On August 27, 2010, the ED Poland Chapter held a meeting at the Department of Microelectronics and Computer Science of Technical University of Lodz, Poland. During the meeting Prof Adam Skorek from University of Quebec at Trois-Rivieres, presented a lecture entitled "High Performance Computing in Nanoelectronics." The lecture was organized in the frame of the EDS

A discussion during the June 26th meeting at the Polish Academy of Science



Discussion after the lecture: Prof. A. Skorek – Distinguished Lecturer, and Prof. A. Napieralski – Head of the Department of Microelectronics & Computer Science

Distinguished Lecturer Program. During the meeting important topics concerning design methods of semiconductor devices were discussed. After a long and successful discussion, opportunities were presented and a new program was established for Polish-Canadian cooperation in high performance computing in nanoelectronics.

~Zygmunt Ciota, Editor

ED Spain

–by Josep Pallares Marzal

Events in Tarragona (Spain): Graduate Student Meeting, Training Course on Compact Modeling, and 3rd International Workshop on TFT Compact Modeling for Circuit Simulation.

Between June 27 and July 2, 2010, the Department of Electronic Engineering of the Universitat Rovira i Virgili (URV, Tarragona, Spain) organized several international events related to semiconductor devices. These events were sponsored by the ED Spain Chapter and took place at the Campus of URV.

The first of these events was the VII Graduate Student Meeting on Electronic Engineering, which was held on June 27–28. It is an annual event consisting of several plenary talks given by prestigious researchers and a number of student talks in both oral and poster forms. The 2010 event, chaired by Prof. Xavier Vilanova (URV), was partially sponsored by two European-funded actions ("NANOSIL" and "COMON"). It included 7 plenary presentations with two of them conducted by EDS Distinguished Lecturers: Prof. Andrea Lacaita (Politecnico di Milano, Italy) speaking on the physical modeling of nanoscale memories, and Prof. Eugeni García-Moreno (University of the Balearic Islands, Spain) giving his presentation about the radiation dose effects in semiconductor devices and circuits. The other lectures were related to the field of electron devices, sensors and ICs. Prof. Giuseppe Iannaccone (Univ. of Pisa, Italy) addressed the ballistic and semi-ballistic modeling of nanoscale transistors. Prof. Holger Borchert (Univ. of Oldenburg, Germany) conducted a lecture entitled: "Hybrid solar cells based on semiconductor nanocrystals and poly (3-hexylthiophene)." Prof. Russell Binions (UCL, London, UK) gave a talk about new approaches to sensors for environmental monitoring. Prof. Étienne Sicard (INSA Toulouse, France) talked about electromagnetic compatibility of integrated circuits. Prof. Georges Zissis (Univ. Paul Sabatier, Toulouse, France) gave a talk entitled "Light sources and Lighting a challenge for the sustainable development process." There was one award for the best student oral presentation and another award for the best student poster presentation.

The next event at URV Campus was the first edition of the Training Courses on Compact Modeling (TCCM), which was held on June 30–July 1. It was sponsored by the European-funded actions "COMON" and "NANOSIL" and chaired by Prof. Benjamin Iñiguez (from URV). It included 12 lectures on different aspects of compact device modeling and its applications. Four of them were conducted by EDS Distinguished Lecturers: Prof. Sorin Cristoloveanu (MINATEC, France) targeted the electrical characterization of thin-film SOI MOSFETs; Prof. Jamal Deen (McMaster University, Canada) addressed the modeling of low frequency noise in semiconductor devices; Prof. Antonio Cerdeira (CINVESTAV, Mexico) talked about parameter extraction methods; and Prof. Benjamin Iñiguez made a lecture on the small-signal modeling of FETs. The lectures were all very interesting. Prof Asen Asenov (Univ. of Glasgow) addressed the compact

Lecturers of the Graduate Student Meeting on Electronic Engineering at URV Campus (left to right) Prof. X. Vilanova (organizer of the event), E. Sicard, A. Lacaita, E. García-Moreno and R. Binions

modeling of parameter fluctuations. Prof. Iltcho Angelov (Chalmers Technical University, Sweden) targeted the high-frequency equivalent circuit models of FET devices. Prof. Tor A. Fjeldly (UniK, Norway) talked about analytical 2D and 3D electrostatic modeling of Multi-Gate MOSFETs. Prof. Tibor Grasser (TU-Wien, Austria) addressed the transport modeling in electron devices. Dr. Renaud Gillon (On Semiconductor, Belgium) conducted a lecture on the modeling of electro-thermal and reliability effects in FET devices. Dr. Wladek Grabinski (GMC, Switzerland) gave a talk on GNU/Open Source CAD Tools for Verilog-A Compact Model Standardization. Dr Kiyoo Itoh (Hitachi, Japan) targeted "Variability-conscious Circuit Designs for Low-voltage Nano-scale CMOS LSIs." Finally, Prof. Massimo Poncino (Politecnico di Torino, Italy) gave a lecture entitled "Leakage power modeling for the reduction of power consumption in CMOS ICs." More than 50 people from different countries attended this Training Course.

On July 2, the 3rd IEEE International Workshop on Compact Thin-Film Transistor Modeling for Circuit Simulation (CTFT 2010) was held at the URV Campus in Tarragona and chaired by Prof. Benjamin Iñiguez. The workshop included invited and regular presentations. Some of the invited talks were given by EDS Distinguished Lecturers: Prof. Arokia Nathan (UCL London, UK), Prof. Jamal Deen (McMaster University, Canada) and Prof. Magali Estrada (CINVESTAV, Mexico). The CTFT workshop has been consolidated as a major event in the field of compact TFT modeling.

~Jan Vobecky, Editor

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

–by Nikita M. Ryskin

NNNPh'2010

On September 6–8, 2010, the 5th conference for young scientists "Nanoelectronics, Nanophotonics and Nonlinear Physics" (NNNPh'10) was held in Saratov. NNNPh is the annual conference hosted by the Saratov Branch of the Institute of Radio Engineering and Electronics, Russian Academy of Science (IRE RAS) since 2006. This year's conference program included 5 Plenary Lectures presented by invited speakers, 53 talks and 23 posters 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." The book of abstracts was published and distributed to the more than 100 conference participants. The NNNPh'10 conference website is located at http://nnnph06.fatal.ru.

Participants of the 2010 Saratov/Penza Chapter Workshop

The Saratov/Penza Chapter is a technical co-sponsor of the NNNPh and many IEEE members participated actively as conference organizers. Dr. Irene E. Kuznetsova chaired the Local Technical Committee, and four IEEE members served as members of the Program Committee. Vice-Chair of the IEEE Russian Section, Prof. S.A. Nikitov (IRE RAS, Moscow) served as the Conference Chair. During the conference, he met with the Saratov chapter officers and discussed current activities and future plans.

APEDE 2010

The International Conference "Actual Problems of Electronic Devices Engineering" (APEDE 2010) was held on September 22–23, 2010. This is a biannual conference hosted by Saratov State Technical University (SSTU) with technical co-sponsorship by the Saratov/Penza Chapter. Prof. S.A. Nikitov (Russian IEEE Section Chair, Moscow) was the Program Committee Chairman. Many IEEE members played key roles in the organization of the conference. Prof. A. A. Zakharov served as the Program Committee Vice-Chair and Local Organizing Committee Chair, and Dr. Alexei Miroshnichenko (SSTU) was the Executive Secretary. Prof. V.A. Tzarev (SSTU), N. M Ryskin and D. I. Trubetskov (SSU) were members of the Program Committee. Also V. A. Tzarev, N. M Ryskin and A. A. Zakharov served as technical session chairs.

At the conference, 5 Plenary Lectures and nearly 100 talks were presented at 3 sessions: "Microwave Electronics, including Nanoelectronics," "Microwave Theory and Technique," and "Power Electronics, Electron Devices, Instruments Application and Technology." The APEDE

2010 website can be found at http://apede2010.sstu.ru.

At the Closing Ceremony, Chapter Chair Prof. N.M. Ryskin gave a short overview of IEEE goals and activities for the purpose of recruiting new members.

IEEE Day Celebration

On October 7, 2010, the Saratov/Penza Chapter celebrated IEEE Day by holding its annual Workshop "Electromagnetics of Microwaves, Submillimeter and Optical Waves" at Saratov State University. The Workshop began with the 2010 Activity Report presented by the Chapter Chair, Prof. N.M. Ryskin. The workshop's technical program included 5 talks and the program can be found at the Chapter website at http://www.sgu.ru/faculties/physical/ieee. Twelve IEEE members and 14 guests attended the Workshop and later enjoyed the conference reception. The Workshop was very helpful for popularization of IEEE and recruiting new members.

~Tomislav Suligoj, Editor

Asia & Pacific (Region 10)

ED/SSC Nanjing

–by Hong Yu

The IEEE ED/SSC Nanjing Chapter recently hosted an EDS Distinguished Lecture (DL) at Southeast University, Nanjing, China.

On July 23, 2010, EDS Distinguished Lecturer, Prof. Robert X. Gao, of the Department of Mechanical Engineering at the University of Connecticut, was invited to give a lecture entitled, "Mechatronic Design and Modeling for Improved Observability of Dynamic Process." He first presented an overview of the research activities at the Electromechanical Systems Laboratory in the areas of design and modeling of mechatronic devices for improving the observability of dynamic systems and process, such as manufacturing and human physical activities. Then he introduced and explained the principle of mechatronic devices, which can monitor human physical activities. The seminar demonstrated the potential of integrating sensing and multi-physics modeling in a wide range of engineering applications. After his talks, Prof. Gao answered questions from students and shared his research experience with the attendees.

Speakers and some of the attendees of the EDS DL meeting held, July 23, 2010. EDS Distinguished Lecturer, Prof. Robert X. Gao, Department of Mechanical Engineering, University of Connecticut (first row, second from left), and the host, Prof. Qing-An Huang, ED/SSC Nanjing Chapter Chair (first row, third from left)

ED/MTT/SSC Penang

–by Boon Leng LIM

The ED/MTT/SSC Penang Chapter organized two Distinguished Lectures during the month of August 2010. Dr. Tan Cher Ming of Nanyang Technological University, Singapore, gave a talk on *New Driving Force for Electromigration in ULSI Interconnection and Its Implication to IC Layout* on August 4, 2010. On August 24, 2010, Dr. Manusun Chan of Hong Kong University of Science and Technology gave a DL on Compact Modeling for Nano Transistors from Circuit Simulation Perspective. Both talks were well attended by Chapter members and participants from Industry and academia.

~Mansun J. Chan, Editor

Professor Mansun Chan delivering the DL at the Penang Chapter

ED/SSC/Photonics Western Australia

–by Adam Osseiran

The 25th WIMNACT-MQ was successfully organized by the ED/SSC/Photonics Western Australia Chapter on July 28, 2010 in Perth, in collaboration with the Rel/CPMT/ED Singapore Chapter, the Australian Capital Territory (ACT) Section ED/PHO Chapter and the Victorian Section ED/PHO Chapter. Four EDS Distinguished Lectures (DLs) were given by: Prof. Juin Liou of the University of Central Florida (UCF) on *Electrostatic Discharge (ESD) Challenges in Modern and Future Integrated Circuits;* Prof. Kin-Leong Pey of the Singapore University of Technology and Design (SUTD) on *New Insight of Resistive Switching in MIS Nano-scale Devices;* Prof. Ramgopal Rao of the Indian Institute of Technology Bombay (IIT-B) on *More Than Moore Era: Convergence of Bio-Nano-Information Technologies;* and Prof. Xing Zhou of the Nanyang Technological University (NTU) on *Unification of MOS Compact Models with the Unified Regional Modeling Approach*.

The Chapter also organized a series of technical talks. On January 22, 2010 Professor Krishnmamachar Prasad from Auckland University of Technology, New Zealand, gave a talk on "*The Wonderful World of Microelectronics Interconnects.*" On March 24, 2010, Professor Vincent J. Mooney III of the School of ECE Georgia Tech, USA, gave a talk on a "*Novel Probabilistic Hardware: A New Design Paradigm*". Professor David L. Pulfrey from the University of British Columbia gave a technical talk *"Enhancing the Efficiency of CdTe Solar Cells via a Tandem-Cell Approach"* on April 23, 2010, followed by a presentation on *"Semiconductor Nanowires for Future Optoelectronics"* by Dr. Hannah Joyce from the Australian National University in Canberra.

Prof. Chandorkar (second from left - front row) with attendees after the technical talk

ED/SSC Bangalore

–by Sankara Reddy

The ED/SSC Bangalore Chapter organized four technical talks including distinguished lectures, July–September 2010. Prof. Arun Chandorkar of IIT Bombay gave a talk on *Process Variability and Circuit Parameter Optimization of MOS Structures*. Dr. Nitin Jain, CTO, Anoki Waves, San Diego, USA, gave a technical talk on *Millimeter Wave SoC*. Distinguished Lectures by Dr. K. R. Kumar, Director of AMS designs at Ikanos Communications on *PLL Design in Nanometer CMOS* as well as by Dr. J. Prasad, Director of Device Technology at DSM Solutions, USA, on "High Frequency Characterization of Transistors." Each talk was well attended with an average of 45 members.

ED Delhi

–by Manoj Saxena

A national workshop on Recent Trends in Semiconductor Devices and Technology was jointly organized by the ED Delhi Chapter and Deen Dayal Upadhyaya College of the University of Delhi, September 17–18, 2010. More than 130 delegates from 20 different institutions, including academic and research institutions as well as industry, attended. The workshop featured a series of invited talks by leading scientists from Defence Research Organization, National Physical Laboratory and IITs. Topics covered included nanomaterials and devices, MEMS including bio-MEMS and their development and characterization. An EDS Distinguished Lecture by Dr. M. K. Radhakrishnan, Chief Technical Consultant, NanoRel on *Advancements in*

25th WIMNACT, MQ-1 in Perth (Front from left to right) Gilberto Umana-Membreno, Xing Zhou, Kin-Leong Pey, Ramgopal Rao, Juin J. Liou, Adam Osseiran, and Laurie Faraone.

Participants and speaker after the DL talk. First row (from left): Dr. Mridula Gupta, Chapter Chair; Professor R. S. Gupta, Past Chapter Chair; Dr. M. K. Radhakrishnan, EDS DL and Dr. Manoj Saxena, Secretary- EDS Delhi Chapter

Device Analysis – Modes of Search for D-zone was organized on September 24, 2010, at University of Delhi South Campus. More than 30 delegates from various institutions attended the talk which featured the challenges in characterization and metrology analysis of devices as dimensions shrink to nano-meter regime.

ED Nepal

–by Bhadra Pokharel

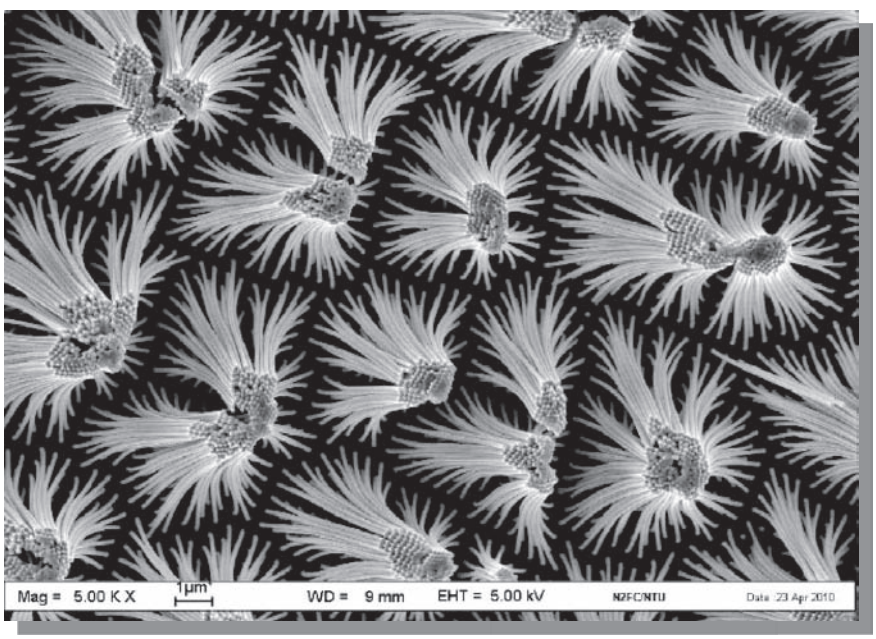
Two technical talks and a one-day seminar were organized by the ED Nepal Chapter, July–September, 2010. Technical talks by Dr. Ram Chandra Rai, Department of Physics, SUNY College, Buffalo, USA, on *Magneto dielectric Effects in Multiferroics* on July 18, 2010, and Dr. Rajendra Parajuli, on *Cluster Fragmentation for Energy,* were attended by more than 40 participants including EDS members. Attendees of a one-day seminar organized by the Chapter on August 7th , on the theme of devices, enjoyed Keynote speaker, Ganesh Shah, former minister of science and technology, Nepal, who gave an insight into the policies and welcomed speakers Dr. Shekhar Gurung, Dr. Lok Narayan Jha and Dr. Devendra Raj Mishra. More than 70 participants from different institutions and universities in Nepal attended the program.

ED/Rel/CPMT Singapore

–by Chee Lip Gan

The flagship conference of the Singapore Chapter, International Symposium on Physical and Failure Analysis of Integrated Circuits (IPFA), technically co-sponsored by the Electron Devices Society, a Workshop on Challenges in 3D ICs and Systems and 24th WIMNACT were the main events during the past 3 months. The 17th IPFA was held at the Suntec International Convention Centre, Singapore, July 5–9, 2010. The conference had 50 oral and 30 poster presentations apart from 9 of the invited papers and two Best Paper exchanges from ISTFA 2009 and ESREF 2009. The keynote speaker, Professor Krishna Saraswat of Stanford University, gave an excellent insight into the greater challenges caused by limits of scaling. Dr. Robert Steeman of REC Solar, described the challenges of the photovoltaic industry. Four tutorials were held prior to the conference, covering the latest trends in device failure and reliability analysis. An equipment exhibition depicting the latest in the FA equipment was also held. The main attraction was the "art of failure" FA photo contest which attracted many failure analysts. The first prize winning FA picture is shown here. More than 200 participants attended the IPFA.

The Chapter also organized a workshop on Challenges in 3D ICs and Systems on July 12, 2010, at Nanyang Technological University. There were 18 talks in 4 sessions, ranging from design and applications, processes, process integration, reliability and characterization and failure analysis, which were attended by about 100 participants.



"Nano Flowers formed by Nanowires" – Art of Failure Analysis photo contest winning image, by R. A. Susantyoko

IPFA General Chair, Gan C.L., presenting a token of appreciation to Prof. Krishna Saraswat

Inauguration of EDS Student Chapter at VIT, Vellore. From left: Prof. D. P. Kothari, Prof. Ramgopal Rao, Prof. V. Raju, Prof. K. Chidambaram and Prof. Partha Mallik

On July 19, 2010, the chapter organized a DL talk at Nanyang Technological University, by Prof. Hei Wong of City University, Hong Kong. The topic was *Complex High-k Oxides: The Promising Candidates for Next Generation CMOS Technology*, which attracted 20 participants from academia and industry.

The 24th WIMNACT was organized in Singapore on July 26, 2010, at the National University of Singapore (NUS), with 3 DL speakers: Juin Liou of University of Central Florida, Ramgopal Rao of IIT Bombay, and Kin Leong Pey of Singapore University of Technology and Design (SUTD), and 2 local speakers. The event attracted about 30 attendees. The Chapter also co-sponsored the 25th WIMNACT-Australia in Perth, Canberra, and Melbourne for hospitality as well as partial support for the DLs to travel to Australia. This is the 7th time that the chapter organized and sponsored the WIMNACT in its 8-year history.

ED VIT Vellore

–by Partha Mallik

The new ED student chapter at Vellore Institute of Technology (VIT) University, Vellore, India, was inaugurated on September 4, 2010, by EDS Region 10 SRC Vice-Chair, Prof. Ramgopal Rao of IIT Bombay. Prof. Rao delivered a Distinguished Lecture on Research in Electronics and released the chapter souvenir. Prof V. Raju, Vice Chancellor of VIT University, also addressed the gathering which was followed by the address of Prof. D. P. Kothari, Advisor to the Chancellor of VIT University. The event was attended by many students and new EDS members who enjoyed the interactive Q&A session with Prof. Rao after the talk. Prof. Partha Mallik, the Chapter's faculty advisor coordinated the event.

~M.K. Radhakrishnan, Editor

ED Japan

–by Shin'ichiro Kimura

An open forum and an international conference were been held in cooperation with the IEEE Electron Devices Society Japan Chapter.

On Thursday September 2, 2010, at Kumamoto National College of Technology, the 8th open forum of URSI-C Japan (International Union of Radio Science, URSI Commission C Japan Branch) was held in Kumamoto Prefecture, with the title of "High Speed Communications and Realization of Dream." Special keynote speech was delivered by Mr. Hideo Sugimoto, President of Dainichi Denshi, concerning the launch of a satellite manufactured by the union of craftsmen in Higashi Osaka, Japan. The satellite was launched successfully in January, 2009. In another three talks, recent topics on high speed communications were discussed. Twenty people attended the forum.

The International Conference on Solid State Devices and Materials SSDM 2010 was held at the University of Tokyo from September 22–24, 2010. A total of 797 papers were submitted and 549 were accepted, including papers for the poster session. More than 1,100 participants enjoyed the 98 technical sessions held in 12 rooms. It was also announced that SSDM 2011 is going to be held at Aichi Industry & Labor Center in the city of Nagoya during September 2011.

~Kazuo Tsutsui, Editor

How to Form an IEEE Student Branch and Student Branch Chapter

An IEEE Student Branch gives students the opportunity to meet and learn from fellow students, as well as faculty members and professionals in the field. A good IEEE Student Branch can be one of the most positive elements in an Electrical Engineering, Computer engineering or Engineering Technology department. IEEE Student Branches are established at over 1,000 universities and colleges throughout the world. Student Branch activities offer numerous educational, technical, and professional advantages of IEEE membership through special projects, activities, meetings, tours and field trips.

Establishing an IEEE Student Branch requires the signatures of 20 IEEE Student members on a petition. The petition must specify the name of the Branch, and the names of the Interim Student Chair and faculty member who will serve as Counselor of the Branch. The petition must also be approved by the Department Chair and two faculty members, who are also IEEE members above student grade. Submit the petition to IEEE Student Services to begin the approval process, which includes verification of the IEEE membership of the students and the faculty members on the petition, review of the programs offered at the educational institution, review and approval by the IEEE Regional Director, the Regional Student Activities Committee Chair and the IEEE Regional Activities Board (RAB). If further information is required, please contact: IEEE MGA Administration, Phone +1 732 562 5527, Fax +1 732 463 9359 or E-mail: petition@ieee.org

Once a university/college has established an IEEE Student Branch, an affiliation can be made with one or more of IEEE's technical societies to form a Student Branch 'Chapter'. There are currently over 300 IEEE Student Branch Chapters, with the Electron Devices Society having 23 at various institutions in a number of regions. The requirements for the establishment of an IEEE Student Branch Chapter for EDS are as follows:

SCD and SDSU Student Branch Leaders celebrate a successful S-PAC (Student Professional Awareness Conference)

- A petition by not less than twelve (12) Student Branch members, who are members of the IEEE technical Society, must be submitted to Laura Riello of the EDS Executive Office at 445 Hoes Lane, Piscataway, NJ 08854 USA or via fax at 732 235-1626.
- The petition must specify the name of the Student Branch, the name of the technical Society with which the Student Branch Chapter will be affiliated, the name of the interim Branch Chapter Chair and the name of the faculty Advisor, who must be a member of IEEE and the technical Society, above student grade.
- After the Advisor and the IEEE Student Branch Executive Committee have approved the petition, it should be sent to the EDS Executive Office.
- Upon receipt of the petition, the EDS Office will forward it to IEEE Student Services to verify the IEEE and technical Society membership of individuals who signed the petition. If the petition is in order, Student Services staff will take the necessary action to obtain formal approval of the petition by the Society President, the Regional Director and the Regional Student Activities Committee Chair. Student Services staff will acknowledge receipt of the petition and will keep the faculty advisor informed of the status of the request.

EDS welcomes the formation of new Student Branch Chapters and we look forward to hearing from you. If you have any further questions, please contact Laura Riello (l.riello@ieee.org).

EDS MEETINGS CALENDAR
(As of 2 December 2010)

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

January 20 - 21, 2011, T **Dielectric Thin Films for Future ULSI Devices: Science and Technology**, Location: Tokyo Institute of Technology, Tokyo, Japan, Contact: Koji Kita, E-Mail: kita@adam.t.u-kokyo.ac.jp, Deadline: 9/25/10, www: http://home.hiroshima-u.ac.jp/iwdtf/

February 9 - 11, 2011, T **Spanish Conference on Electron Devices**, Location: Museum Es Baluard, Palma de Mallorca, Spain, Contact: Eugeni Garcia-Moreno, E-Mail: eugeni.garcia@uib.es, Deadline: 10/15/10, www: http://www.cde-conf.org/

February 21 - 24, 2011, @ **International Vacuum Electronics Conference**, Location: National Science Seminar Complex,Indian Institute of Science, Bangalore, India, Contact: Lalit Kumar, E-Mail: director@mtrdc.drdo.in, Deadline: 10/15/10, www: http://ewh.ieee.org/conf/ivec/2011

February 23 - 25, 2011, T **IEEE International Conference on the Experience of Designing and Application of CAD Systems in Microelectronics**, Location: Zakarpattya, Polyana-Svalava, Ukraine, Contact: Rostyslav Kryvyy, E-Mail: cadsm@polynet.lviv.ua, Deadline: 12/20/10, www: http://www.lp.edu/ua/CADSM

March 14 - 16, 2011, T **IEEE International Symposium on Quality Electronic Design**, Location: Hyatt Regency Hotel, Santa Clara, CA, USA, Contact: Ali Iranmanesh, E-Mail: alii@svtii.com, Deadline: 9/30/10, www: http://www.isqed.org

April 4 - 7, 2011, @ **IEEE International Conference on Microelectronic Test Structures**, Location: Royal Academy of Arts and Sciences, Amsterdam, The Netherlands, Contact: Annemiek Janssen, E-Mail: a.m.r.j.janssen@utwente.nl, Deadline: 9/17/10, www: http://www.utwente.nl/ewi/icmts2011

April 10 - 14, 2011, * **IEEE International Reliability Physics Symposium**, Location: Hyatt Regency Monterey, Monterey, CA, USA, Contact: David Barber, E-Mail: dbarbsta@aol.com, Deadline: 10/1/10, www: http://www.irps.org

April 22 - 22, 2011, T **IEEE Workshop on Microelectronics and Electron Devices**, Location: Boise State University, Student Union Bldg., Boise, ID, USA, Contact: Vishwanath Bhat, E-Mail: wkbhat@micron.com, Deadline: 1/24/11, www: http://www.ewh.ieee.org/r6/boise/wmed2011/WMED2011.html

April 25 - 27, 2011, T **International Symposium on VLSI Technology, Systems and Applications**, Location: Ambassador Hotel, Hsinchu, Taiwan, Contact: Clara Wu, E-Mail: clara@itri.org.tw, Deadline: 7/1/10, www: http://vlsitsa.itri.org.tw

April 25 - 28, 2011, T **International Symposium on VLSI Design, Automation and Test**, Location: Ambassador Hotel, Hsinchu, Taiwan, Contact: Elodie Ho, E-Mail: elodieho@itri.org.tw, Deadline: 10/15/10, www: http://vlsi-dat.itri.org.tw/

May 6 - 8, 2011, T **IEEE Sarnoff Symposium on Advances in Wired and Wireless Communications**, Location: Nassau Inn, Princeton, NJ, USA, Contact: Pantelis Monogioudis, E-Mail: pantelis.monogioudis@alcatel-lucent.com, Deadline: 12/17/10, www: http://www.sarnoffsymposium.org

May 16 - 19, 2011, T **International Electrostatic Discharge Workshop**, Location: Stanford Sierra Conference Center, Lake Tahoe, CA, USA, Contact: Lisa Pimpinella, E-Mail: lpimpinella@esda.org, Deadline: 11/20/10, www: http://www.esda.org/iew.htm

May 19 - 20, 2011, T **IEEE International Meeting for Future of Electron Devices, Kansai**, Location: Kansai University Centenary Memorial Hall, Suita, Osaka, Japan, Contact: Akira Hiroki, E-Mail: hiroki@kit.ac.jp, Deadline: 1/31/11, www: http://www.imfedk.org

May 22 - 26, 2011, @ **International Symposium on Power Semiconductor Devices & Integrated Circuits**, Location: Paradise Point Resort & Spa, San Diego, CA, USA, Contact: Mohamed Darwish, E-Mail: mdarwish@maxpowersemi.com, Deadline: 10/25/10, www: http://www.ispsd2011.com/

May 22 - 26, 2011, * **IEEE International Memory Workshop**, Location: TBD, Monterey, CA, USA, Contact: Tamer San, E-Mail: t-san@ti.com, Deadline: 1/20/11, www: http://www.ewh.ieee.org/soc/eds/imw/

May 22 - 26, 2011, @ **International Symposium on Power Semiconductor Devices & Integrated Circuits**, Location: Paradise Point Resort & Spa, San Diego, CA, USA, Contact: Mohamed Darwish, E-Mail: mdarwish@maxpowersemi.com, Deadline: 10/25/10, www: http://www.ispsd2011.com

May 31 - June 3, 2011, T **International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication**, Location: JW Marriott Resort and Spa, Las Vegas, NV, USA, Contact: Alan Brodie, E-Mail: alan.brodie@kla-tencor.com, Deadline: 9/1/10, www: http://www.eipbn.org

June 5 - 9, 2011, @ **TRANSDUCERS - International Conference on Solid-State Sensors, Actuators and Microsystems**, Location: China National Convention Center, Beijing, China, Contact: Qing-An Huang, E-Mail: hqa@seu.edu.cn, Deadline: 12/1/10, www: http://transducers11-beijing.org

June 5 - 7, 2011, T **IEEE Radio Frequency Integrated Circuits Symposium**, Location: TBD, Baltimore, MD, USA, Contact: David Ngo, E-Mail: davidngo@ieee.org, Deadline: 1/11/11, www: http://www.rfic2011.org

June 9 - 10, 2011, T **International Workshop on Junction Technology**, Location: Kyoto University (Uji Campus), Kyoto, Japan, Contact: Kyoichi Suguro, E-Mail: kyoichi.suguro@toshiba.co.jp, Deadline: 3/1/11, www: http://www.iwailab.ep.titech.ac.jp/IWJT/

June 13 - 17, 2011, T **International Conference on Noise and Fluctuations**, Location: Ryerson University, Toronto, ON, Canada, Contact: Jamal Deen, E-Mail: jamal@mcmaster.ca, Deadline: 12/1/10, www: http://www.icnf2011.org/

June 13 - 16, 2011, @ **IEEE Symposium on VLSI Technology**, Location: Rihga Royal Hotel, Kyoto, Japan, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: 1/24/11, www: http://www.vlsisymposium.org

June 19 - 24, 2011, * **IEEE Photovoltaic Specialists Conference**, Location: Washington State Convention Center, Seattle, WA, USA, Contact: Americo Forestieri, E-Mail: pvsc@wowway.com, Deadline: 2/28/11, www: http://www.ieee-pvsc.org

June 20 - 22, 2011, T **Device Research Conference**, Location: University of California, Santa Barbara, Santa Barbara, CA, USA, Contact: Miguel Urteaga, E-Mail: murteaga@teledyne-si.

com, Deadline: Not Available, www: http://www.deviceresearchconference.org

June 21 - 24, 2011, T **IEEE International Nanoelectronics Conference**, Location: Chang Gung University, Tao-Yuan, Taiwan, Contact: Jer Chyi Wang, E-Mail: jcwang@mail.cgu.edu.tw, Deadline: 12/31/10, www: http://www.inec2011.org.tw/

July 4 - 7, 2011, T **IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits**, Location: Songdo Conventa, Incheon, Korea, Contact: Jeongkyoung Kim, E-Mail: ipfa2011@gmail.com, Deadline: 1/17/2011, www: http://www.ieee.org/ipfa

August 1 - 3, 2011, T **International Symposium on Low-Power Electronics and Design**, Location: TBD, Fukuoka, Japan, Contact: Hiroshi Nakamura, E-Mail: hiroshi@ieee.org, Deadline: Not Available, www: http://www.islped.org/

August 28 - 31, 2011, T **Topical Workshop on Heterostructure Microelectronics**, Location: Nagaragawa Convention Center, Gifu, Japan, Contact: Masaaki Kuzuhara, E-Mail: kuzuhara@fuee.u-fukui.ac.jp, Deadline: 4/15/2011, www: http://www.twhm.net

September 7 - 10, 2011, T **International Conference on Simulation of Semiconductor Processes and Devices**, Location: Tokyo International Exchange Center, Tokyo, Japan, Contact: Akira Hiroki, E-Mail: hiroki@kit.ac.jp, Deadline: Not Available, www: http://www.si.eei.eng.osaka-u.ac.jp/sispad/2011/

September 12 - 17, 2011, T **International Conference on Electromagnetics in Advanced Applications**, Location: Torino Incontra Conference Center, Torino, Italy, Contact: Roberto Graglia, E-Mail: roberto.graglia@polito.it, Deadline: 2/25/2011, www: http://www.iceaa.net

September 15 - 16, 2011, T **IEEE International Siberian Conference on Control and Communication**, Location: Siberian Federal University, Krasnoyarsk, Russia, Contact: Oleg Stukach, E-Mail: tomsk@ieee.org, Deadline: 5/10/11, www: http://conf.sfu-kras.ru/sibcon

September 18 - 21, 2011, T **IEEE Custom Integrated Circuits Conference**, Location: Double Tree Hotel, San Jose, CA, USA, Contact: Melissa Widerkehr, E-Mail: melissaw@widerkehr.com, Deadline: 6/1/11, www: www.ieee.cicc.org

October 3 - 6, 2011, * **IEEE International SOI Conference**, Location: Tempe Mission Palms Hotel & Conference Center, Tempe, AZ, USA, Contact: Jeff Wolf, E-Mail: jeff@gotomarketconsulting.net, Deadline: 5/6/11, www: http://www.soiconference.org

October 9 - 11, 2011, * **IEEE Bipolar/BiCMOS Circuits and Technology Meeting**, Location: Global Learning Center, Atlanta, GA, USA, Contact: Janice Jopke, E-Mail: ccsevents@comcast.net, Deadline: 5/2/11, www: http://www.ieee-bctm.org/

October 9 - 14, 2011, T **IEEE European Microwave Integrated Circuits Conference**, Location: Manchester Central, Manchester, United Kingdom, Contact: Ian Hunter, E-Mail: i.c.hunter@ee.leeds.ac.uk, Deadline: 2/14/2011, www: http://www.eumweek.com

October 9 - 14, 2011, T **IEEE European Microwave Integrated Circuits Conference**, Location: Manchester Central, Manchester, United Kingdom, Contact: Ian Hunter, E-Mail: i.c.hunter@ee.leeds.ac.uk, Deadline: 2/14/11, www: http://www.eumweek.com

October 10 - 12, 2011, * **International Semiconductor Conference**, Location: Hotel Sinaia, Sinaia, Romania, Contact: Cristina Buiculescu, E-Mail: cas@imt.ro, Deadline: 6/1//2011, www: http://www.imt.ro/cas

October 16 - 19, 2011, * **IEEE Compound Semiconductor IC Symposium**, Location: Hilton Waikoloa Village, Waikoloa, HI, USA, Contact: Lisa Boyd, IEEE Meetings & Conferences, E-Mail: l.boyd@ieee.org, Deadline: Not Available, www: http://www.csics.org/

October 16 - 19, 2011,* **IEEE International Interconnect Technology Conference**, Location: Hyatt Regency at San Francisco Airport, Burlingame, CA, USA, Contact: Wendy Walker, Widerkehr & Associates, E-Mail: wendyw@widerkehr.com, Deadline: 2/1/2012, www: http://www.ieee.org/conference/iitc

November 7 - 9, 2011, @ **IEEE International Conference on Microwaves, Communications, Antennas and Electronic Systems**, Location: David Intercontinental Hotel, Tel Aviv, Israel, Contact: Ortra Ltd., E-Mail: comcas@ortra.com Deadline: 6/15/11, www: http://www.comcas.org

November 30 - December 3, 2011, * **IEEE Semiconductor Interface Specialists Conference**, Location: Key Bridge Marriott Hotel, Arlington, TX, USA, Contact: John Robertson, E-Mail: jr@eng.cam.ac.uk, Deadline: 7/24/11, www: http://www.ieeesisc.org/

December 5 - 7, 2011, * **IEEE International Electron Devices Meeting**, Location: Hilton Washington, Washington, DC, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: http://www.ieee.org/conference/iedm

April 15 - 19, 2012, * **IEEE International Reliability Physics Symposium**, Location: Hyatt Regency Orange County, Garden Grove, CA, USA, Contact: David Barber, E-Mail: dbarbsta@aol.com, Deadline: Not Available, www: http://www.irps.org

June 3 - 8, 2012, * **IEEE Photovoltaic Specialists Conference**, Location: TBD, Austin, TX, USA, Contact: Americo Forestieri, E-Mail: pvsc@wowway.com, Deadline: Not Available, www: http://www.ieee-pvsc.org

June 12 - 14, 2012, @ **IEEE Symposium on VLSI Technology**, Location: Hilton Hawaiian Village, Honolulu, HI, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: http://www.vlsisymposium.org

December 10 - 12, 2012, * **IEEE International Electron Devices Meeting**, Location: Hilton San Francisco, San Francisco, CA, USA, Contact: Phyllis Mahoney, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: http://www.ieee.org/conference/iedm

Samar K. Saha
EDS Vice-President of Publications

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Semiconductor Physics; Device Physics; Device Characterization; Compact Modeling; Process Technology; Quantum Electronics; Educational Activities.

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Samar K. Saha
EDS Vice-President of Publications
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