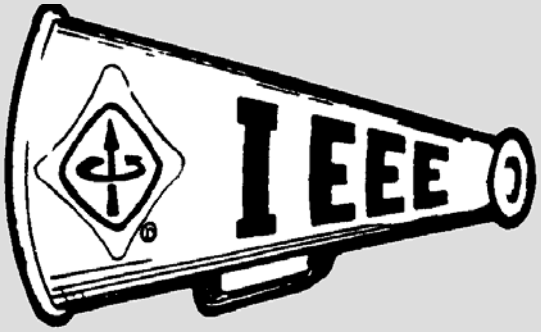
The Valley Megaphone



Newsletter of the

Institute of Electrical and Electronics Engineers, Inc. Phoenix Section

September 2008, Volume XXII, Number 9

Executive Committee

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This Issue of the Valley Megaphone features:

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Contents:

IEEE Phoenix Section Executive Committee meeting minutes can be found at: http://www.ieee.org/phoenix

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Life Members
Rao Thallam
thallam@ieee.org

The Valley Megaphone is the newsletter of the Phoenix Section of the Institute of Electrical and Electronics Engineers. It is published monthly and reaches about 4000 members. Submit articles, advertisements, and announcements to Sam Karikalan at the above email address. Deadline for announcements and advertisements is the third Friday of the month prior to publication. Advertising Rates: Full page: $200, 3/4page: $125, ½ page: $75, 1/3 page: $50, 1/4 page: $25.
Change of address/email? Call toll free 1-800-678-IEEE. Please allow 6-8 weeks. Section Web Page is: http://www.ieee.org/phoenix

Student Branches

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DeVry, Computer Society

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postj@erau.edu

Phoenix Section Executive Committee Meeting – First Tuesday of the month.

September '08 Meeting: **No meetings in July and August.**

Date: September 2, 2008, Tuesday

Time: 6:00 pm to 8:00 pm

Place: Phoenix Airport Hilton, 2435 South 47th Street
Phoenix, AZ, 85034 Tel.: 480-804-6017

Directions:

From the Hohokam Expressway (AZ 143), exit University Ave, go West and turn right on 47th Place.

More Info:

Meetings are held on the first Tuesday of the month. All interested IEEE members are welcome to attend.

Contact:
Keith Holbert, Phoenix Section Chairman, holbert@asu.edu

Call for IEEE Fellow Nominations

Nominations are being accepted for the IEEE Fellows class of 2010. The rank of IEEE Fellow is the institute's highest member grade, bestowed on an IEEE Senior Member who has had an extraordinary record of accomplishments in any of the IEEE fields of interest. The deadline for nominations is 1 March 2009. Senior Members can be nominated in one of four categories: application engineer/practitioner, research engineer/scientist, educator, or technical leader.

The Fellows Web pages (http://www.ieee.org/fellows) contain information regarding the history of the IEEE Fellows program, the nomination process, access to the Fellows Nomination Kit, lists of Fellows who are eligible to be references and more about the Fellow program.

Call for IEEE-Phoenix Officer Nominations

The Phoenix Section of the IEEE is seeking nominations for the following Section Officer positions for the 2009 term: **Chair, Vice-Chair, Secretary and Treasurer.** Please send your questions or nominations to Chuck Weitzel (E-mail:chuck.weitzel@freescale.com), Rao Bonda (E-mail:rao.bonda@freescale.com) or Barbara McMinn (E-mail:barbara.mcminn@aps.com).

IEEE – EDS Masters/Ph.D Student Fellowship

The IEEE Electron Devices Society has established the Masters & Ph.D. Student Fellowship Programs to promote, recognize and support advanced degree study and research within the Electron Device Society's fields of interest. The application deadline is May 15, 2009. Please contact Chuck Weitzel, Chair of the IEEE Phoenix – Waves and Devices Chapter, at Chuck.Weitzel@freescale.com or Tel. 480-413-5906, for details.

IEEE Life Members Affinity Group, Phoenix Section

The first meeting of the Life Members Affinity Group of the IEEE Phoenix Section will be held on **Wednesday, September 3, 2008**. There are 450 Life Members in Phoenix Section. Come and meet other life members and participate actively in IEEE Phoenix Section.

Topic: **"Energy Challenges"**

Speaker: **Dr. C. Bruce Johnson,**
President of Johnson Scientific Group, Inc

Venue: SRP's PERA Club (Big Horn Terrace Room)
1, East Continental Dr., Tempe, AZ.

The Date for this meeting has been changed from Sep 9, 2008 to Sep 3, 2008.

Click on this link for directions to SRP PERA Club: SRP PERA Club

Agenda:

11:00 – 11:30 AM	Registration
11:30 - 12:00 Noon	Lunch
12:00 - 1:00 PM	Presentation
1:00 – 1:15 PM	Question and Answer session
1:15 PM	Adjourn

Cost: $5.00 per person, includes lunch

Please contact the Section Secretary, Michel Ebertin (michel@ebertin.net) to check on the availability of seats. All those who have RSVP'ed already, please try to attend, as the Chapter has to pay for lunch for the complete number reserved.

ABSTRACT

Without energy (E) there is nothing, $m=E/C^2$. Without sufficient energy, various global economies will collapse. In fact, these economies generally require more energy every year. Where will this energy come from? How much will it cost? What are the expected impacts of the various energy sources and uses on the environment? Brief summary answers to these questions are presented and a plea is made for more renewable energy R&D at our national laboratories and within the industrial community.

2008 Chapter Executive Committee

Chair	Dr. Rao Thallam	(602) 236-8064
Vice Chair	Prof. George Karady	(480) 965-6569
Secretary	Michel Ebertin	(480) 991-2136
Treasurer	Leslie Daviet II	(602) 525-2377
Program Committee Chair	Dr. C.B. Johnson	(480) 759-2826

IEEE Phoenix Area Consultants Network

September Meeting:

Date: **Thursday, September 11th, 2008**

Time: **Feel free to come around 5:30 and socialize.**
We take dinner orders around 6:30 PM
Meeting begins around 7:30 PM

Place: **Denny's Restaurant**
3315 N. Scottsdale Rd. (at Osborn)
Scottsdale, Arizona 85251

Topic: **Requirements Engineering Analysis**

Speaker: **Prabhaharan Kumarakulasingam,**
Universal Laser Systems, Scottsdale, AZ

Abstract:

Prabhaharan Kumarakulasingam will speak about the use of requirements analysis in engineering projects. One of the most critical phases of in an engineering project is requirements elicitation and analysis. The success of a project depends greatly on the quality of these requirements and their associated analysis. Prabha will speak about models and approaches that can be used to help support these essential tasks.

About the Speaker:

Prabha has had many years experience in technology industries, and is familiar with hardware and software design and development, as well as project management. He holds degrees from the University of Texas at Austin and the University of Kansas. He is currently electronic systems manager at Universal Laser Systems in Scottsdale.

For more information, contact Vaughn Treude, vaughn@nakota-software.com, or see the IEEE PACN website, www.ieeepacn.com.

Power & Energy Society Announcements

September Technical Meeting

Date: **Thursday, September 18, 2008**

Speaker: **Bob Smith**, T&D Maintenance Director, Arizona Public Service Company

Topic: **TransWest Express Project**

Abstract: In October of 2005, APS announced that it was undertaking a feasibility analysis for a new transmission project from Wyoming to the Desert Southwest, the TransWest Express Project, which would allow APS and other utilities in the Desert Southwest and Southern California to access coal, wind and other resources in Wyoming. APS conducted the feasibility analysis in an open stakeholder process during 2006. The analysis showed that a bi-pole 500kV DC transmission system capable of 3000MW was the most economic and technically feasible option. The analysis also showed that there were a number of viable routing alternatives from a permitting standpoint. Because APS was only looking at the potential of 1000MW to 1500MW of resources from Wyoming, an effort was also undertaken to sign up partners including a project manager. Interest in the project was expressed by SRP, TEP, SCE, National Grid, as well as several independent entities interested in managing the project.

In early 2007 PacifiCorp announced plans for an AC transmission system from Wyoming to Southern Nevada, the Gateway South Project. In August 2007, APS, PacifiCorp, National Grid, and the Wyoming Infrastructure executed a Co-development Agreement to allow co-development of the two projects. Significant progress has been made in the areas of permitting and WECC Regional Planning and Rating Process.

Biography: Bob Smith is presently the Director of the Transmission and Distribution Maintenance Department at Arizona Public Service Co. in Phoenix. Bob has a Master's degree in Electrical Engineering from New Mexico State University and is a registered professional engineer in the State of Arizona. Bob has worked in the electric industry and for APS for 22 years in the areas of Transmission Planning, Construction and Maintenance, and Transmission and Control Area Operations. Bob has represented APS in several regional planning forums and has been extensively involved in WECC activities including two years chairing the WECC Compliance Monitoring and Operating Practices Subcommittee. In October of 2005 Bob was designated Project Manager of APS' TransWest Express Project.

October Technical Meeting

Chris Hanks from the Salt River Project is scheduled to give a presentation on **Browning Automation Project**. Further details will be available shortly on the PES website at http://ewh.ieee.org/soc/pes/phoenix/.

51st Annual IEEE PES Golf Outing

The date of the PES's annual golf outing – September 27 - is rapidly approaching. Reservations were due August 29 but late entries will be accepted as long as there is room and payment is received by September 5. Everyone is welcome to participate – regardless of skill level or whether an IEEE member.

Please be sure to include the handicap of all golfers as this makes recordkeeping much simpler.

Also, if any guests will be attending the dinner, please be sure to include them. We need as accurate of a count as possible for making the food arrangements.

Come join us for an enjoyable day in the coolness of Prescott, AZ.

51st Annual IEEE-PES Golf Outing

Date:	September 27, 2008
Time:	1:00 pm
Place:	Antelope Hills Golf Course One Perkins Drive, Prescott, AZ 86301
Fee per Player:	$85.00 – Includes Greens Fees, Golf, Range Balls and Dinner
Prizes:	Prizes for top three teams plus individual skills will be awarded. A raffle will be held.
Dinner:	Will be held at the course at 7:00 pm and is included in the fee. To bring a guest for dinner, add $25.00. No host bar opens at 6:00 pm.
Reservations:	Mail form with check payable to: IEEE-PES c/o Arizona Sun Sales, 120 N. 44th St. #420, Phoenix, AZ, 85034

51st Annual IEEE-PES Golf Outing

Reservation Form

Please include all requested information. Also, include email addresses for team members not in our original mailing.

TEAM (please print)

Player _____Hdcp or Avg Score___

Email_____

Player _____Hdcp or Avg Score___

Email_____

Player _____Hdcp or Avg Score___

Email_____

Player _____Hdcp or Avg Score___

Email_____

Additional Dinner Guest: _____

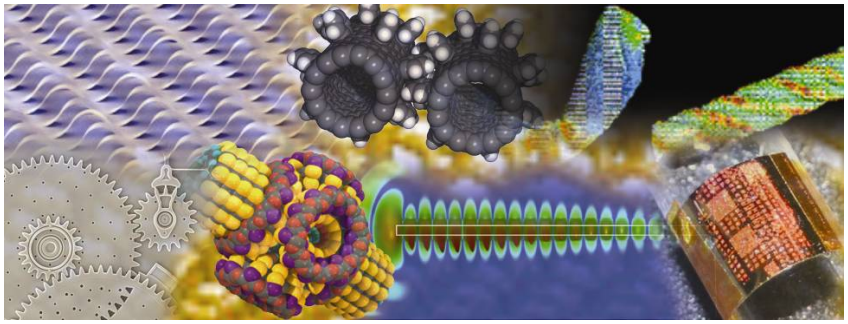
_____

Institute of Electrical and Electronics Engineers, Inc.

Phoenix Section

Components, Packaging and Manufacturing Technology Society Chapter
&
Waves and Devices Chapter

PRESENT AN ALL-DAY WORKSHOP ON



Images courtesy of Argonne National Laboratory, NASA Ames Center for Nanotechnology, Stanford University, Sandia National Laboratories (SUMMIT™ Technologies) and Nanorex, Inc.

Emerging Device and Packaging Technologies

Friday, November 14th, 2008 7:00 A.M. – 5:00 P.M.
Arizona State University, Tempe, Arizona – ASU Memorial Union (Arizona Room)

EXECUTIVE COMMITTEE

Workshop Chair
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vpatluri@ieee.org

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c.weitzel@ieee.org

Registration Chair
Sergio Pacheco, Freescale
sergio.pacheco@ieee.org

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Electronic Media Chair
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Kalluri Sarma, Honeywell
Sudhama Shastri, CMD
Sandeep Tonapi, Anveshak

Call for Papers

The continued scaling of microelectronics for mainstream applications such as computing and communications on one hand has been enabled by newly developed materials, tools, and techniques; on the other hand the associated capabilities are spawning novel applications and market opportunities. This year's one-day workshop focuses on the topics of nanotechnology, bioelectronics, and energy. Invited experts from industry, academia, research labs, and consortia will share their vision of technical challenges and opportunities in these areas. Current and emerging device, interconnect, and packaging technologies will be discussed in depth. A poster session on the broader workshop topic of emerging device and packaging technologies has been added this year to provide additional presentation and discussion opportunities. Select vendors will exhibit products and services related to all aspects of the supply chain for microelectronics design and manufacturing.

Invited Speaker Topics

Nanotechnology
- Nanofabrication
- Nanoelectromechanical Systems
- Nanofluidic Devices

Bioelectronics
- Biochips
- Biosensing
- Biosecurity

Energy
- Solar Cells
- Energy Harvesting
- Micro Power Generators

Poster Session

Abstracts are invited for consideration to the poster session in emerging device and packaging technologies (not limited to nanotechnology, bioelectronics, or energy).

Poster Abstract Submissions: Two pages (topic, summary of significant results and conclusions – WORD or PDF files only). Abstract must include author names, affiliations, addresses, and e-mail address of lead author.

Submission Deadline:	August 29, 2008
Submitting Address:	melmiller@ieee.org
Acceptance Notification:	September 19, 2008
Final Presentation Due:	November 5, 2008

Sponsorships and Vendor Displays: This is a great opportunity to promote your company or product. For more information, contact Vasu Atluri vpatluri@ieee.org or Chuck Weitzel c.weitzel@ieee.org (sponsors) and Steve Rockwell steve.rockwell@ieee.org (vendors).

Workshop Registration: On-line registration will open in August at *www.acteva.com/go/ieeephxsecworkshop2008*

IEEE THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

CPMT IEEE COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY

IEEE Components, Packaging and Manufacturing Technology Society
Phoenix Chapter

Monday, September 22nd, 2008 Tutorial

Enabling Technologies for Green Electronic Packaging

Tutorial Scope

In our modern day living we are all very much aware of the waste materials we create, improper disposal of products at the end-of-life and many health and environmental consequences resulting from such actions. According to the UN Environment Programme, electronic waste totals 50 million tons a year worldwide ["High Tech Trash", National Geographic, Jan. 2008]. In the electronics industry this is a growing problem due to "rapid technology changes" and the practice of "planned obsolescence" in consumer electronic products. If the waste material is not properly recycled and treated, they become major sources of toxins and carcinogens. To combat the situation, RoHS (Restriction of Hazardous Substances) Directive came into effect in 2003 and this directive restricts the use of six hazardous materials in the manufacture of electronic and electrical equipment. We need to be more thoughtful and creative in the future in reducing and/or eliminating the use of harmful materials as we develop new materials, new assembly/manufacturing processes and new products.

This technical tutorial will focus on the theme of **"Enabling Technologies for Green Electronic Packaging"**. Each presenter will provide an overview of basic technologies, discuss current challenges, and offer solutions in the respective areas. They will also look beyond today's limitations.

Tutorial Agenda

12:00 – 12:50 PM	Registration
12:50 PM – 1:00 PM	Welcome Address **Dr. Mali Mahalingam**, Freescale Semiconductor Inc. **Dr. Vasu Atluri,** Intel Corporation
1:00 PM – 2:00 PM	**Pb free solders in electronic packaging** **Dr. Darrel Frear**, Freescale Semiconductor Inc.
2:00 PM – 3:00 PM	**Conductive adhesives as a Pb-free alternative in electronic packaging** **Prof. C.P.Wong, Georgia Inst. of Tech**
3:00 PM – 3:30 PM	Refreshment Break
3:30 PM – 4:30 PM	**Electronics and Sustainable Engineering: an IEEE perspective** **Prof. Braden R. Allenby**, Arizona State University
4:30 PM – 5:30 PM	**Component Manufacturer's Perspective on Design for Environment Including Recycling - Ms. Linda Young**, Intel Corporation
5:30 PM – 5:45 PM	Tutorial Wrap-Up

IEEE Components, Packaging and Manufacturing Technology Society
Phoenix Chapter

Monday, September 22nd, 2008 Tutorial (Contd.)

Tutorial Abstracts & Speaker Biographies

Pb-free solders in electronic packaging

Dr. Darrel Frear, Freescale Semiconductor Inc.

Electronic Packaging has undergone tremendous change in the past ten years as a result of legislative actions restricting hazardous materials (notably RoHS in Europe and China). One of the key elements targeted in the legislative bans is Pb that has historically been extensively used in the form of Sn-Pb alloys as electrical and mechanical interconnects in electronic packages. Through extensive efforts of research and development in the industry, national labs and academia, a variety of Pb-free solder alloys have been, for the most part, successfully implemented for component to board attach applications. A few exemptions to the ban on Pb still exist (e.g., automotive applications and flip chip) but these are at risk of expiring in the near future. A number of challenges have been met in the Pb-free transition but there are still quite a few technical items that need to be addressed. This presentation will give an overview of current, and planned, legislative efforts to ban or restrict Pb in electronics including the status of exemptions. The composition and metallurgy of typical Pb-free solders will be discussed along with the thermomechanical behavior (including aging, fatigue, drop impact, time dependent deformation). The issues associated with developing Pb-free solutions for the current Pb exemptions (e.g., flip chip, die attach) will be highlighted. A summary of future work needed will also be given.

Dr. Darrel Frear earned an A.B. in Engineering Science from Dartmouth College (1982) and M.S. (1984) and Ph.D. (1987) degrees in Materials Science from the University of California, Berkeley. He is a Distinguished Member of the Technical Staff at Freescale Semiconductor and is Department manager in the Advanced Packaging Systems Integration Laboratory. Previously, Darrel was with Sandia National Labs as a Principle Member of the Technical Staff. Darrel works in advanced packaging research and development including materials, manufacturing and reliability and has spent over 15 years in Pb-free solder research and development.

Recent advances of Conductive adhesives as a lead-free alternative in electronic packaging

Prof. C.P.Wong, Georgia Inst. of Tech.

Tin-lead solder alloys are widely used in the electronic industry. They serve as interconnects that provide the conductive path required to achieve connection from one circuit element to another. There are increasing concerns with the use of tin-lead alloy solders with the recognition of hazards of using lead. Lead-free solders and electrically conductive adhesives (ECAs) have been considered as the most promising alternatives of tin-lead solder. ECAs consist of a polymeric resin (for example, an epoxy, silicone, or polyimide) that provides mechanical properties such as adhesion, mechanical strength, and impact strength and a metal filler that conducts electricity. ECAs offer numerous advantages over conventional solder technology, such as environmental friendliness(lead-free), mild processing conditions (enabling the use of heat-sensitive and low-cost components and substrates), fewer processing steps (reducing processing cost), low stress on the substrates, and fine pitch capability (enabling the miniaturization of electronic devices). Therefore, conductive adhesives have been used in flip chip assembly, LCD display, CSP and BGA applications. However, no currently commercialized ECAs can replace tin-lead metal solders in all applications due to some challenging properties such as lower electrical conductivity, conductivity fatigue in reliability testing, limited current-carrying capability, and poor impact strength. Considerable research has been conducted recently on the improvement of electrically conductive adhesives as a solder replacement. This review will discuss the materials, applications and recent advances of electrically conductive adhesives as a solder replacement in electronic packaging industry.

Prof. C. P. Wong is a Regents' Professor and holder of the Charles Smithgall Institute Endowed Chair at the School of Materials Science and Engineering at Georgia Institute of Technology. He received his B.S. degree from Purdue University, his Ph.D. degree from the Pennsylvania State University and a postdoctoral fellowship with Nobel Laureate Professor Henry Taube at Stanford University.He was with AT&T and was elected to an AT&T Bell Laboratories Fellow in 1992. Since 1996, he is a Professor at Georgia Tech. He holds over 50 U.S. patents, numerous international patents, has published over 600 technical papers. He is a Fellow of the IEEE and was the President of IEEE-CPMT Society (1992 &1993). He is a member of the National Academy of Engineering since 2000.

Electronics and Sustainable Engineering: an IEEE perspective

Prof. Braden R. Allenby, Arizona State University

Over ten years ago, the electronics sector began work on industrial ecology and design for environment, structured means by which environmental considerations could be integrated into electronic product design. Since then, with the rise of everything from synthetic realities to instantaneous search capabilities across the Web, the importance of electronics products, and the services platformed on them, has only increased. The challenges this poses to us as engineers, and to the IEEE as an organization, are substantial, and demand thoughtful and comprehensive change.

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

IEEE Components, Packaging and Manufacturing Technology Society Phoenix Chapter

Monday, September 22nd, 2008 Tutorial (Contd.)

Tutorial Abstracts & Speaker Biographies (Contd.)

Prof. Braden R. Allenby is currently Professor of Civil and Environmental Engineering, and of Law, at Arizona State University, having moved from his previous position as the Environment, Health and Safety Vice President for AT&T in 2004. Dr. Allenby received his BA from Yale University, his J. D. from the University of Virginia Law School, his Masters in Economics from the University of Virginia, and his Ph.D. in Environmental Sciences from Rutgers. He is currently President of the International Society for Industrial Ecology; Chair of the AAAS Committee on Science, Engineering, and Public Policy; a Batten Fellow in Residence at the University of Virginia's Darden Graduate School of Business Administration; and a Fellow of the Royal Society for the Arts, Manufactures & Commerce. From 1995 to 1997, he was Director for Energy and Environmental Systems at Lawrence Livermore National Laboratory, and from 1991 to 1992 he was the J. Herbert Holloman Fellow at the National Academy of Engineering in Washington, DC. His areas of expertise include Design for Environment, industrial ecology, telework and netcentric organizations, and earth systems engineering and management.

Component Manufacturer's Perspective on Design for Environment Including Recycling

Ms. Linda Young, Intel Corporation

Throughout the last decade, we have become increasingly aware of how production and use of electronics can potentially affect the environment. Intel has responded to this increased interest by designing products that offer a reduced environmental footprint in the production, use and ultimate disposal. This session will explore Design for the Environment (DfE) with regard to recycling through the lifecycle of the technology. We will discuss materials use, enabling the supply chain, partnerships and our challenges.

Ms. Linda Young has close to 20 years experience in the environmental field. Early in her career, she worked in the oil industry on both the east and west coasts supporting water, waste, and air programs. Linda joined Intel in 1992 where she has held a variety of technical and management positions in the Arizona Environmental, Health & Safety (EHS) Department. Linda is currently the Product Ecology Manger and is responsible for developing product ecology vision and direction for Intel and establishing strategies for addressing emerging regulatory requirements.
Linda has a BS degree in Chemical Engineering from Oregon State University.

Date: **Monday, September 22nd, 2008**

Location: Amphitheater (Located in Third Floor)
Hilton Phoenix Airport, 2435 South 47th Street, Phoenix, Arizona - 85034
Tel: (480) 894-1600; Website: www.phoenixairport.hilton.com

Time: 12:00 PM – 12:50 PM Registration
12:50 PM – 5:45 PM Program
3:00 PM – 3:30 PM Refreshment Break

Cost: $30 for IEEE members / $40 for Non-IEEE Members (Includes Tutorial Material & Refreshments)

Registration: www.ieee.org/phoenix (Web Registration by Sept. 15th, 2008, is strongly encouraged)

Audience: IEEE members and non-members all are welcome to attend.

For more information please call any of the following officers:

Mali Mahalingam (480) 413-5368	Vasu Atluri (480) 554-0360	Qing Zhou (480) 552-9177
Vivek Gupta (480) 413-5849	Vladimir Noveski (480) 554-2375	Rao Bonda (480) 413-6121
Samir Pandey (480) 552-7502	Surinder Tuli (480) 554-8275	Sunit Mahajan (480) 552-5317

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
WAVES AND DEVICES PHOENIX CHAPTER

Meeting Open to Non-IEEE Members
September 18th 2008 EDS Meeting
Freescale Semiconductor, Tempe, AZ
Group Conference Room, 4:00 PM

SURFACE-POTENTIAL-BASED COMPACT MODELS OF MOS TRANSISTORS

Prof. Gennady Gildenblat
Motorola Professor of Electrical Engineering
Arizona State University, Tempe, Az

Abstract

There is presently a widely held consensus that a surface-potential-based approach is best suited for the development of advanced compact models of MOS transistors (bulk, SOI and multiple-gate). In particular, the new industry (CMC) standard compact model of bulk devices (PSP) is surface-potential-based replacing the venerable BSIM model family. The work proceeds at a rapid pace to extend the benefits of surface-potential-based modeling into the SOI domain. This presentation compares the different approaches to compact modeling and introduces bulk PSP and SOI models. The emphasis is on the interplay between the device physics and mathematical structure of compact models and their circuit design applications including features of particular interest for RF design. We also discuss the PSP-based Varactor model and PSP applications for statistical modeling.

Biography

Gennady Gildenblat received the MSEE (with honors) from the St. Petersburg Electrical Engineering Institute in 1975 and the Ph.D. degree in Solid-State Physics from the Rensselaer Polytechnic Institute, Troy, NY, in 1984. His research interests include semiconductor device physics and modeling, novel semiconductor devices, and semiconductor transport. He has over 140 publications in these areas including several books, invited articles and US patents.

In 1980 he has joined the General Electric Corporate Research and Development Center in Schenectady, NY, where he was engaged in various aspects of semiconductor device physics and IC technology development. Between 1984 and 1986 he supervised the Cryogenic CMOS device engineering study at the Digital Equipment Corporation in Hudson, MA. Since 1986 Dr. Gildenblat has been with The Pennsylvania State University. In 2006 he joined Arizona State University as a Motorola Professor of Electrical Engineering. He has developed the advanced surface-potential-based SP and PSP compact MOSFET models. The PSP model (joint development with Philips) has been selected in 2005 as a new industry standard by the Compact Model Council after receiving the first prize in the international competition for the next generation of compact MOSFET models. PSP-based Varactor model (joint development with Jazz Semiconductor and Freescale) has become an industry standard in 2008. Dr. Gildenblat is recipient of the 2006 Semiconductor Research Corporation Technical Excellence Award and a member of technical program committees for IEDM and CICC.

Date: **September 18, 2008**
Location: Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ
Group Conference Rm, Bldg 94.
Time: **4:00-5:00 PM *Presentation*.** **Pizza will be served following the Seminar**

For more information, please call
Chuck Weitzel (Chapter Chair) at (480) 413-5906 chuck.weitzel@freescale.com
Steve Rockwell (Chapter Vice-Chair) at (480) 413-5235 s.rockwell@motorola.com

Phoenix Chapter of the IEEE Computer Society

LinkedIn Update

The Phoenix Chapter of the Computer Society has formed a group on LinkedIn. If you are interested in joining the group, please send an email to Louis Rayes or Joy Shetler (email addresses are listed on the Computer Society website).

For more information about LinkedIn, please check out the description on Wikipedia:
http://en.wikipedia.org/wiki/LinkedIn
or the LinkedIn Website: http://www.linkedin.com

We are on our summer "hiatus"! No meetings until October.

For the latest news or info about past meetings, please visit our web site:
http://www.ewh.ieee.org/r6/phoenix/compsociety

Upcoming Meetings

June to September – Summer Hiatus, No Meetings

Wednesday, October 1, 2008
"I-19 Wireless Corridor Project," by Galen Updike, Arizona Broadband Telecommunications

Wednesday, November 5, 2008
TBD

Wednesday, December 3, 2008
TBD

Would you like to be a speaker at a future meeting? We are always looking for interesting speakers to cover computer related topics. Contact joy.shetler@computer.org OR C.Vasquez-Carrera@computer.org for more information on becoming a speaker today.

Calling all Engineers in Region 6!!!

Are you interested in working with your local schools, school districts and teachers?
Do you want to help impact the level of technical literacy of teachers and their students in your local community?
Did you know that there are materials and tools that you can use to help?

Then you should attend

IEEE's Teacher In-Service Program (TISP) Training Workshop!
November 7-8, 2008

Started in 2001, TISP features IEEE volunteers developing and presenting technologically oriented subject matter to educators in a professional development or "in-service" setting. In the last several years, IEEE volunteers have made more than 76 presentations to over 1800 pre-university educators within the United States, Asia and Africa. These educators reach over 185,000 students! There are a number of pre-planned classroom activities that you could use in a classroom setting. Visit us at: http://www.ieee.org/web/education/preuniversity/tispt/index.html

Now you can be a TISP Champion! The IEEE Educational Activities Department, Region 6 and the local Sections are hosting a TISP Training Workshop: **November 7-8, 2008, at the San Francisco Marriott Downtown Hotel.**

The workshop will cover how to organize volunteers for TISP and how to bring the program to teachers in your local schools and school districts. Thanks to the support of IEEE USA and the IEEE Educational Activities Board the event is free for all IEEE members and invited educators! **(IEEE will reimburse for travel-related expenses for this workshop.)**

The event will begin on Friday, 7 November at 4:30 pm with a 2 hour presentation followed by a dinner at 7:30 pm.

On Saturday, 8 November, the event will run from 9:00 am to approximately 4:00 pm. It will include hands-on presentations, a question and answer period as well as discussion on numerous topics such as: program background and scope, getting started, potential costs to sections and educators, suggestions on making contact with your local pre-university community, and the alignment of an activity with educational standards. Breakfast and lunch will be provided.

The goal of the training session is to impact at least 1,000 pre-university educators in Region 6 and to help IEEE volunteers implement TISP in their local pre-university education communities.

During an actual TISP presentation, IEEE volunteers provide teachers with all needed materials and help them work their way through the lesson. Working together helps the teachers to feel more comfortable teaching the activity. The goal is for the teachers to bring the strategy back to their classrooms and use the lesson to excite their students. Please visit www.tryengineering.org to see the lessons you can use to foster technical literacy.

For more information on this upcoming TISP training session or TISP participation, please contact:
Yvonne Pelham, Manager of Educational Outreach, +1 732.562.5321, y.pelham@ieee.org (or) Doug Gorham, Managing Director of Educational Activities, +1 732.562.5483, d.g.gorham@ieee.org.

IEEE PHOENIX SECTION ANNUAL BANQUET

Saturday, February 7th, 2009

Hilton Phoenix Airport - Grand Ballroom. Phoenix.

AWARD NOMINATION INSTRUCTIONS

1. This Awards Guide lists the awards along with the selection criteria that will be implemented for selecting the award recipient.

2. Please read through this awards guide to help you in selecting the award category for nomination.

3. Complete the award nomination form given at the end of this document and submit ONLY as an email attachment to the IEEE Phoenix Section Annual Banquet Organizing Committee member responsible for the award category along with a copy to Dr. Vasu Atluri, Awards Committee Chair. Dr. Vasu Atluri's email address is vpatluri@ieee.org and telephone number is (480) 227-8411. The list of contacts is as follows:

   For Member Category Nominations, please send the form along with supporting documents to Dr. Keith Holbert, Chair, at keith.holbert@asu.edu. He can be reached by telephone at (480) 965-8594.

   For Chapter / Society Category Nominations, please send the form along with supporting documents to Mr. Debendra Mallik, Vice-Chair, at dmallik@ieee.org. He can be reached by telephone at (480) 554-5328.

   For Non-Member Category Nominations, please send the form along with supporting documents to Dr. Henning Braunisch, Secretary, at braunisch@ieee.org. He can be reached by telephone at (480) 552-0844.

   For Corporate Category Nominations, please send the form along with supporting documents to Dr. Vasu Atluri, Awards Committee Chair, at vpatluri@ieee.org. He can be reached by telephone at (480) 227-8411.

   For Educational Category Nominations, please send the form along with supporting documents to Mr. Nick Leonardi, Student Activities Coordinator, at nleonardi@premiers2.com. He can be reached by telephone at (480) 720-1435.

4. Nominator can submit a form for self or for others. All sections of the form should be completely filled by typing in bold and capital letters. If needed, submit additional documents such as resume in support of the nomination.

5. Deadline for submission of the nomination form is Friday, December 5th, 2008. Awards Banquet Committee will review the forms and inform the selected candidates and nominators by Friday, December 19th, 2008.

If you have any additional questions, please contact Dr. Vasu Atluri, Awards Committee Chair, at (480) 227-8411 or by email at vpatluri@ieee.org.

IEEE PHOENIX SECTION ANNUAL BANQUET

Saturday, February 7th, 2009

Hilton Phoenix Airport - Grand Ballroom, Phoenix.

AWARDS GUIDE

(UPDATED OCTOBER 2007)

The scope and purpose of the Section Awards program is to plan, promote and implement award and recognition programs that recognize outstanding performance in furthering the objectives and professional aims of the IEEE Phoenix Section, the IEEE and the IEEE-USA, and to stimulate others to pursue such achievements of excellence.

The Phoenix Section has established the following general award and recognition categories:

- Member
- Chapter/Society
- Non-member
- Corporate
- Educational
- Special Chair

AWARD AND RECOGNITION CATEGORIES

A. Member:

The Section recognizes individual members in two categories:

- Young Engineer of the Year
- Engineer of the Year

The **Young Engineer of the Year** award is offered to recognize an individual of Member Grade in the section with 10 years or less experience in the profession. Ten years include graduate degree study period. Nominations for this award may be offered by individuals, by a company or by a Society Chapter. Qualifications for the award must satisfy at least one of the following criteria:

- Be recognized by his/her employer for important contributions to a project/company mission
- Made important contributions to the Section/Chapter/Conference, profession or the community through leadership activities related to an event(s)
- Publish at least one refereed technical paper
- Hold at least one U.S. patent

The **Engineer of the Year** award is offered to recognize an individual of Member or Senior Member Grade in the section with over 10 years experience in the profession. Nominations for this award may be offered by individuals, by a company or by a Society Chapter. Qualifications for the award must satisfy at least one of the following criteria:

- Be recognized by his/her employer for important and significant contributions to the organization projects or towards the company mission
- Publish at least two refereed technical papers
- Hold at least two U.S. patents
- Made significant contributions to the community or profession

The Section also recognizes members who attain advanced member grade levels including Fellow and Senior Member. Criteria are established by the IEEE.

Fellow recognizes unusual distinction in the profession and is conferred only by invitation of the Board of Directors upon a person of outstanding qualifications and experience in IEEE designated fields. It is conferred to a person who has made important individual contributions to one or more of the IEEE designated fields The Fellow Grade is the highest membership grade which can be achieved within IEEE. Total number selected in any one year does not exceed one-tenth percent of the total voting institute membership.

Senior Member Grade is the highest for which application may be made and requires experience reflecting professional maturity. Candidate should be an engineer, scientist, educator, technical executive, or originator in IEEE designated fields. Candidate should have shown significant practice for at least ten years and significant performance over a period of at least five of those years.

B. Chapter/Society:

The Chapter/Society may provide one award to recognize individual, team or organization using a variety of criteria including technical, professional, chapter / society contribution or other special category.

Awards should recognize specific contributions, achievements and efforts (individual or team) in the development and implementation of the criteria used for the award.

An "Outstanding Society Chapter Award" for the IEEE Phoenix Section may also be awarded each year. The Section shall solicit and qualify chapters for the Outstanding Society Chapter Award. Nominees are either provided by the Society Chapters or decided by awards committee. The Section may recognize a Society Chapter using a variety of criteria including technical, professional or other special category. Awards should recognize specific contributions, achievements, and efforts including the number of meetings, workshops, etc. consistent with membership size of the Society Chapter, in the development and implementation of the criteria used for this award.

The Chapter/Society award nominations should be approved and submitted by the Chapter Chair or a Chapter Officer assigned by Chapter Chair. The assigned officer name should be informed by Chapter Chair by email in advance to both Dr. Rao Bonda, Annual Banquet Organizing Committee Member responsible for Chapter / Society Category Nominations, and to Dr. Vasu Atluri, Awards Committee Chair.

C. Non-Member:

The Section may recognize non-IEEE members for exemplary contributions (technical and/or professional) to the engineering profession through their efforts within their company, the community or for the Section.

D. Corporate:

The Section recognizes companies in two categories:

- Large Company of the Year
- Small Company of the Year

The companies are recognized for their outstanding technical and / or professional contributions in furthering the objectives and professional aims of the IEEE Phoenix Section, the IEEE, the IEEE-USA and the field of Electrical Engineering. The Technical Contributions should include significant contributions or advancements in technology or the application of technology in the electronics or electro-technology fields. The specific area of technology is not restricted and may include, but is not restricted to, design and manufacturing processes, new products or creative applications to existing technologies. The Professional Contributions include significant contributions made to further the professional goals and programs of IEEE. Companies may be recognized for specific contribution, achievements and efforts that promote the professionalism goals of the section and IEEE. Nominations may be for a variety of professionalism related areas including support of IEEE members, employee development and training initiatives, community involvement or other programs that improve the general image of the engineer or engineering profession. Companies with less than or equal to 500 employees are considered Small Companies and those with greater than 500 employees are considered Large Companies.

E. Educational:

The Section recognizes educational institutions and educators in the following categories:

- Outstanding IEEE Student Branch
- Outstanding Pre-college Educator
- Outstanding Faculty

The Section shall solicit and qualify award candidates for the Student Branch award. Nominees are provided by the student branch, branch advisor, administrators or Society Chapters. The Section may recognize a Student Branch using a variety of criteria including technical, professional or other special category. Awards should recognize specific contributions, achievements and efforts (individual or team) in the development and implementation of the criteria used for this award.

Nominations for Outstanding Pre-college Educator and Outstanding Faculty may be submitted by any member of the Section. Awards should recognize specific contributions, achievements, programs and efforts completed by an individual who promotes technical literacy or the technical/professional goals of the Section, the IEEE or IEEE-USA. The section also recognizes student scholarship winners selected during the year by a committee consisting of section officers. The criteria for selection are based on academic excellence, participation in IEEE activities, contributions to IEEE and financial need.

F. Special Chair:

The Section Chair may wish to provide up to three special awards to recognize individuals or organizations for activities that support the goals of the Section that are not specified within the above categories, such as public service. The Section Chair may solicit inputs and recommendations from the Awards Committee, Section Officers, and Members of the Section. The Section Chair may recognize IEEE or Non-IEEE members for contributions to IEEE, the engineering profession, and volunteer work. The section chair also recognizes current section officers for their contributions for advancement of the section.

IEEE PHOENIX SECTION ANNUAL BANQUET

Saturday, February 7th, 2009

Hilton Phoenix Airport - Grand Ballroom, Phoenix, Arizona

Award Nomination Form

Completely filled form should be submitted as an email attachment ONLY to the appropriate award committee member Award committee chair should be copied on the email – Award committee contact list are listed on first page

Candidate's Name: (including Dr., Mr. and Ms.)

Address:

Telephone Number: **Fax Number:**

Email:

IEEE Member: **Yes** **No** **Student** **Membership #**

Award Categories: (please select one)

A. Member: **Engineer of the Year** **Young Engineer of the Year**

B. Chapter / Society: **Technical** **Professional** **Special Category**

Chapter / Society Contribution

Outstanding Society Chapter

C. Non-Member: **Contributions to the IEEE / Engineering Profession**

D. Corporate: **Large Company of the Year**

Small Company of the Year

E. Educational: **Outstanding Student Branch** **Outstanding Faculty**

Outstanding Pre-College Educator

F. Special Chair: **IEEE / Engineering Contributions** **Non-IEEE Contributions**

Award Citation: **(Limit to Maximum Twenty Words)**

IEEE PHOENIX SECTION ANNUAL BANQUET

Saturday, February 9th, 2009

Hilton Phoenix Airport - Grand Ballroom, Phoenix, Arizona

Award Nomination Form

Completely filled form should be submitted as an email attachment ONLY to the appropriate award committee member Award committee chair should be copied on the email – Award committee contact list are listed on first page

Please provide information in support of the nomination in the space provided below – if needed use additiona sheets. Submit other documents such as resume in support of the nomination.

Nominator's Name:

IEEE Member: **Yes** ☐ **No** ☐ **Student** ☐ **Member #**

Affiliation: **Section** ☐ **Chapter / Society** ☐ **Student Branch** ☐ **None** ☐

Affiliated Organization Name:

Telephone Number: **Email:**

Real-Time & Embedded computing conference

You're Invited to Attend

September 25, 2008

Tempe Mission Palms Hotel & Conference Center

60 E. Fifth Street, Tempe, AZ 85281 8:30am – 2:30pm

The **Real-Time & Embedded Computing Conference** (RTECC) is an open-door technical conference & product showcase for those developing computing systems and time-critical applications for industries such as: industrial control, military/aerospace, data communication and telephony, consumer electronics, process control, embedded appliances, and much more.

NEW TOOLS	**NEW** TECHNOLOGIES	**NEW** PRODUCTS
GateFlow FPGA dev Tools	Digital Signal Processing	VME, VXS, PMC/XMC, PCI, PCIe ,cPCI
ReadyFlow Board Support	FPGA Software Radio	Computer Boards & Systems
Libraries	Data Acquisition Boards & Systems	GHS Probe V3 INTEGRITY v 5.0.11,
New Multi v5	Static Source Code Analysis	Distributed Build Double Check
New Trace List	Always on Trace	Virtex 5 Systems, Windows Embedded
New Path Analyzer	Switch Fabric	CE 6.0, Windows XP VxWorks, Linux
CoreFire	Infiniband Storage	WildStar IBM Blade FPGAs Boards

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Examine Technology & Industry Trends **Discover Changes with Vendors** **Hear Innovative Ideas & Solutions**

there's a little extra fun too … **$100* Gas Card Drawing (2 of them) at 2:15 pm**

***Bring a co-worker, mention 'Hot Streak' when you get your pre-registered badge, and we'll enter your name (again)**

Note: This is a non-IEEE event. IEEE Phoenix Section participates in this as an Exhibitor.

IEEE Mentoring Connection

IEEE is offering its members the opportunity to participate in an online program which will facilitate the matching of IEEE members for the purpose of establishing a mentoring partnership. By volunteering as a mentor, individuals use their career and life experiences to help other IEEE members in their professional development. I believe this program can be a great tool to provide our newest members of our profession guidance in their careers and provide experienced members a chance to hear first hand from the newly graduated about the latest training the next generation is receiving. This is a program for higher level members and is provided to help ease the transition out of school and into a career.

As a mentee, you lead your partnership by selecting your mentoring partner from among those who have volunteered to serve in this capacity. I ask that you review the time and effort commitment to the program to ensure a successful mentoring partnership. Participation in the program is voluntary and open to all IEEE members above the grade of Student Member.

If you are interested, please go to http://www.ieee.org/mentoring for information on the roles and responsibilities of each mentoring partner. I encourage you to take advantage of the IEEE network of technical professionals or offer your expertise and sign up for the online mentoring program today.

Who can be an IEEE Mentor?

IEEE higher-grade members (above Student Member grade) who are, but not limited to:

- Willing to give time and effort to the mentoring partnership (we suggest minimum of two hours per month)
- Able to communicate effectively with others
- Willing to share some career successes and failures
- Individuals who may be or have been executives, consultants, or in middle or upper management, or in research
- Individuals who may be or have been educators, entrepreneurs, or self-employed
- Individuals who may be or have been proven leaders offering inspiration and insight
- Individuals who may be or have been IEEE officers or volunteers
- Willing to review an orientation session to learn guidelines, tools of program and the mentee and mentor's role and responsibilities

Who can be an IEEE Mentee?

IEEE higher-grade members (above Student Member grade) who are, but not limited to:

- New professionals in their first or second job, or considering entering graduate programs
- Recent graduates entering the professional workforce for the first time
- Professional making a career move or career change
- Passionate for learning
- Willing to give time and effort to the mentoring partnership (we suggest minimum of two hours per month)
- Willing to identify and clarify their developmental goals
- Interested in learning from another professional "who has been there"
- Willing to participate in mentee orientation session to learn guidelines, and tools of program and their role and responsibilities as a mentee

This program deserves your consideration and doesn't require a large amount of time on your part. It can provide of great assistance to the next generation of engineers.

Russ Kinner
Conferences Chair, Phoenix Section

RE-SEED

Retirees Enhancing Science Education through Experiments & Demonstrations

Overview

RE-SEED (Retirees Enhancing Science Education through Experiments and Demonstrations) is a Northeastern University program that prepares engineers, scientists, and other individuals with science backgrounds to work as volunteers, providing in-classroom support to upper elementary and middle school science teachers with teaching the physical sciences.

After completing a comprehensive free training program, participants volunteer in middle school classrooms on the average once a week for at least one year. RE-SEED began in 1991 with six volunteers. To date close to 500 RE-SEED volunteers have worked in schools in about 100 communities throughout the country offering about 500,000 hours of their time.

Nationally, 75 percent of 7th and 8th grade students are taught physical science by teachers who do not have a major or a minor in the subject (The National Science Board, Science and Engineering Indicators 2000). RE-SEED volunteers possess talent and expertise that complement those of science teachers. They bring with them a wealth of knowledge and experience that allows them to make science interesting and relevant to everyday situations.

RE-SEED volunteers work closely with the host science teachers to help them enrich and implement their school curriculum. Overall the volunteers become involved members of their schools' and even their districts' teaching team, sometimes taking part in curriculum adoption decisions.

Please contact us by email at reseed@neu.edu or phone 888-742-2424; Shelia Kirsch at Sheila.Kirsch@asu.edu and / or Deirdre Weedon, d.weedon@neu.edu. if you are interested in learning more about these training programs.

IEEE Phoenix - Calendar of Events for September 2008:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	**2** **6:00p-8:30p** Phoenix Section Executive Board Meeting	**3** **11:00a-1:15p** IEEE Life Members Affinity Group	**4**	**5** Conference for Power Engineering Leaders of Tomorrow	**6** Conference for Power Engineering Leaders of Tomorrow
7 Conference for Power Engineering Leaders of Tomorrow 2008 30th Electrical Overstress/ Electrostatic Discharge Symposium (EOS/ESD)	**8** 2008 30th Electrical Overstress/ Electrostatic Discharge Symposium (EOS/ESD)	**9** 2008 30th Electrical Overstress/ Electrostatic Discharge Symposium (EOS/ESD)	**10** 2008 30th Electrical Overstress/ Electrostatic Discharge Symposium (EOS/ESD)	**11** 2008 30th Electrical Overstress/ Electrostatic Discharge Symposium (EOS/ESD)	**12**	**13**
14	**15**	**16**	**17**	**18** **12:00p** PES Phoenix Chapter	**19** Sections Congress	**20** Sections Congress
21 Sections Congress	**22** Sections Congress	**23**	**24**	**25** **8:30a-2:30p** Real-Time & Embedded Computing Conference	**26**	**27** 51st Annual IEEE PES Phoenix Chapter Golf Tournament
28	**29**	**30**				
Sun	Mon	Tue	Wed	Thu	Fri	Sat