

The Valley Megaphone

Newsletter of the
**Institute of Electrical and
Electronics Engineers, Inc.,
Phoenix Section**
August 2011,
Volume XXV, Number 8



Executive Committee - 2011

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IEEE Phoenix Section on-line updates can be found at <http://ewh.ieee.org/r6/phoenix/> and on LinkedIn at:

<http://www.linkedin.com/groups?gid=2765918>

Please send announcements for the *Valley Megaphone* to Surinder Tuli at surinder.tuli@gmail.com and to Russ Kinner at r.kinner@ieee.org for inclusion in the Section Calendar.

The IEEE Banquet pictures are up, see <http://ewh.ieee.org/r6/phoenix/AnnualBanquet.htm>

Chapters

Signal Processing & Communications

David Frakes, 480-727-9284
dfrakes@asu.edu

Computer Society

Jerry Crow
jerry.crow@computer.org

CPMT Society

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Education Chapter

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EMBS Chapter

TBD

EMC Society

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GOLD

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Power & Energy Society

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Solid State Circuits

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Teacher-In-Service

Mike Poggie
mike.poggie@ieee.org

Waves & Devices Society

Steve Rockwell
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Life Members

Barry Cummings
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U – News

(for Student Members)

Updates of Student Advisors and Committee Members

Each Student Branch noted on the right side of this page should review current information on Advisors and Student Committee Members and forward to my attention within this week, as we are reviewing contacts for reporting and activities including Student Monthly Meetings.

Nick Leonardi
480-720-1435 Cell
nleonardi@ieee.org
Student Activities Chair

Student Branches

ASU Main, Engineering
Chair: Saurabh Naik,
480-252-0504, svnaik@asu.edu
Advisor: Cihan Tepedelenlioglu,
480-965-6623, cihan@asu.edu

ASU Main, Computer Society
Chair: TBD
Advisor: Guoliang Xue
480-965-6218, xue@asu.edu

ASU Polytechnic
Chair: TBD
Advisor: TBD

DeVry, Phoenix
Chair: TBD
Advisor: Diane Smith
dsmith2@devry.edu

DeVry, Computer Society
Chair: TBD
Advisor: Diane Smith
dsmith2@devry.edu

NAU, Engineering
Chair: TBD
Advisor: Niranjan Venkatraman
v.niranjn@ieee.org

Embry-Riddle, Prescott
Chair: Tim Lemm
timothy.lemm@erau.edu
Advisor: John E. Post
posti@erau.edu

U – Newsbytes

- ASU Polytechnic is currently seeking Advisor for the Student Branch. Please email Nick (at email address above) with Recommendations.

Start your own MicroMouse and compete for cash prizes!

- The Section has a full tournament sized MicroMouse maze. Funding for your project may be available. For details contact the Section Student Activities Chair, Nick Leonardi at nleonardi@ieee.org.
- View pictures from the MicroMouse contest at the Southwest Area Spring 2010 meeting at <http://picasaweb.google.com/ieeegoldphx/2010IEEEESWASpringMeeting> (photography by David Huerta, GOLD Affinity Group Chair) check with Nick



Phoenix Chapter of IEEE Signal Processing Society and Communications Society



Thanks to all of the attendees who have made this year's technical meetings so successful. More to come in the coming months...

Please contact Chapter Chair David Frakes (dfrakes@asu.edu) to volunteer or propose a speaker for upcoming meetings.



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.



IEEE COMPONENTS, PACKAGING AND
MANUFACTURING TECHNOLOGY SOCIETY

IEEE CPMT Society Phoenix Chapter is seeking volunteers to serve as Chapter Officers during remaining of 2010 and 2011. One has to be a member of IEEE CPMT Society to serve as the IEEE CPMT Society Phoenix Chapter Officer. If interested, please contact Dr. Vasudeva P. Atluri, Chair, IEEE CPMT Society Phoenix Chapter, by sending an email to vpatluri@ieee.org. Regards Vasu AtluriTel: (480) 227-8411 (C)



IEEE Power and Energy Society



Phoenix Chapter

News and Announcements:

- IEEE PES Phoenix Chapter was awarded the **Outstanding Chapter Award for 2010** at the IEEE Phoenix Section Annual Banquet.
- Want to know more about IEEE PES? Watch this video: http://www.youtube.com/watch?v=BRKM4lpo_tk
- **IEEE PES Scholarship Plus Initiative: Scholarships for undergraduates pursuing electric power and energy:** <http://www.ee-scholarship.org/>
- Have you considered becoming a Senior Member of IEEE? It's not as difficult as you think. Basically, you need ten years of professional experience, and your bachelor's degree counts for three of those years. Find out more at the [IEEE Senior Member Program](http://www.ieee.org/MemberProgram) website.

Schedule of Upcoming 2011 Events

September 2011 Luncheon Meeting

- Date:** Thursday, September 15, 2011
- Time:** 11:30 am - 11:45 noon: Registration
11:45 noon: Lunch; 12:15: Program
- Location:** TBD
- Speakers:** Naim Logic, SRP, and Douglas Selin, APS
- Topic:** What Synchrophasor Technology Brings to the Power Grid of the Future?
– Focus on WISP Project”
- Cost:** \$5.00 (No cost if you are a college student)
- Reservations:** Contact Nancy or Stacy at (480) 991-9191 Ext 10 or Ext 16

More information regarding the IEEE PES Phoenix Chapter can be found at:
<http://ewh.ieee.org/soc/pes/phoenix/index.php>

54th IEEE-PES FUNDRAISER GOLF TOURNAMENT



September 24, 2011 in Prescott, AZ

Be sure to join us at Antelope Hills Golf Course, located at 1 Perkins Drive, Prescott, AZ 86301, for a 1:00 PM Shotgun Start.

This is the annual fundraiser for your IEEE-PES Chapter. The fee is \$100 per player or \$400 to sponsor a foursome. Be sure to come early and stay late as there will be free range balls beforehand and dinner afterwards. Cash prizes awarded for first and second place teams. There will also be a Raffle, Skills Games, and Giveaways Galore.

We have a block of rooms reserved at the Holiday Inn Express, 3454 Ranch Drive, Prescott, AZ 86303. The phone number is (928) 445-8900 and remember to ask for the Special IEEE Room Rate. Space is limited so sign up early. Be sure to join us on Friday, September 23rd in the Holiday Inn Express Lobby for happy hour from 6:00-7:30PM, to include beer, wine and finger foods.

Use this sheet to sign up either individually or for your team. You can either:

- Print out and complete, then mail the form with your payment (Made out to IEEE/PES).
- Return this form electronically and then send your payment.
- Send payments to: IEEE-PES

c/o Young Power
7505 E Greenway Road
Scottsdale, AZ 85260

You will be notified via email that your payment has been received and you are

registered to participate. If you have any questions, please feel free to call us at (480) 991-9191.

Please provide all requested information, including email addresses for all team members.

TEAM/SPONSOR _____

Player _____ **Dinner?** _____

Email _____

Player _____ **Dinner?** _____

Email _____

Player _____ **Dinner?** _____

Email _____

Player _____ **Dinner?** _____

Email _____

Additional Dinner Guests: _____

To minimize waste and extra costs, we would like your help getting an accurate dinner count.



Phoenix Section Life Member Affinity Group

About IEEE Phoenix Section Life Member Affinity Group:

An IEEE member automatically becomes an IEEE "Life Member" status when at least 65 years of age and the sum of your current age and years of membership is 100. For more details use the link

http://www.ieee.org/web/volunteers/mga/home/life_members_committee/index.html

Activities: Annual technical meetings scheduled in February, May, October, and December. Elections are held at the December meeting.

Future Technical Meetings:

- Tuesday, October 11, 2011 SRP PERA CLUB
- Tuesday, December 6, 2011 SRP PERA CLUB

Officers:

Chair	A. Barry Cummings	Barry.Cummings@srpnet.com
Vice Chair	Michel Ebertin	Michel@ebertin.net
Secretary	Tom Lundquist	Tom.Lundquist@ieee.org
Treasurer	Leslie Daviet II	lesdavietii@cs.com
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Past Chair	C Bruce Johnson	cbj@johnsonscientificgroup.com



TISP/EIC IS SEEKING VOLUNTEER ENGINEERS TO HELP WITH THE NEW “ARIZONA SCIENCE LAB” VENTURE

THERE HAVE BEEN SOME EXCITING NEW DEVELOPMENTS IN THE “TEACHER IN SERVICE PROGRAM / ENGINEERS IN THE CLASSROOM”:

THE ARIZONA SCIENCE CENTER AND IEEE TISP/EIC HAVE TEAMED TO PRESENT THE “ARIZONA SCIENCE LAB AT THE ARIZONA SCIENCE CENTER”:

- This is a true laboratory facility in a central location for the Phoenix area schools
- The teachers bring their grade 5 to 8 science class (up to 60 students) to the Arizona Science Lab for the day
- **EACH LAB WORKSHOP USES A LAB SETTING TO CONDUCT A PROJECT-BASED LESSON PLAN, COMPLETE WITH DEMONSTRATIONS, LECTURE AND A CONSTRUCTION PROJECT IN A SINGLE 4 HOUR SESSION (EXCLUDING BREAKS)**
- **EACH WORKSHOP IS CONDUCTED BY RETIRED AND EMPLOYED (ON DAY RELEASE) IEEE ENGINEERS**
- The teachers choose a Lab Workshop from a list of ready-to-run Workshops that support the Arizona Science Education Content Standards
- **THE WORKSHOPS WILL OPERATE DURING THE REGULAR SCIENCE CENTER HOURS: 10:00 AM TO 5:00 PM EACH WEEK DAY.**

HENCEFORTH THE EIC GROUP WILL NOT BE GOING TO THE SCHOOLS BUT WILL INSTEAD BE IN THE ONE LOCATION: THE NEW ARIZONA SCIENCE LAB AT THE ARIZONA SCIENCE CENTER, AND THE SCHOOLS WILL COME TO US.

PLUS, INSTEAD OF CONDUCTING A LESSON PLAN OVER FOUR DAYS, WITH MULTIPLE CLASSES OF THE SAME GRADE IN EACH DAY, WE WILL HENCEFORTH BE CONDUCTING A SINGLE 4 HOUR SESSION (NOW TERMED “WORKSHOPS”) ON THE ONE DAY WITH AROUND

60 KIDS OF THE SAME GRADE. THAT IS, THE LESSON WILL BE COMPLETED IN THE ONE 4 HOUR WORKSHOP.

Schools with multiple classes in a grade level will bring different groups on different days. The 60 kid limit can accommodate the kids from two regular school classes. A single workshop will be devoted to a single school. Ultimately we expect to be running workshops each day of the week and at some future time, multiple workshops in parallel each day.

Obviously this reduces our work load even if all our current schools were to book us for the new 2011/2012 school year as:

- We don't have to make four visits to each school, only one to the Science Center
- We don't have to carry all our equipment and materials around the Valley
- Each workshop is equivalent to two school classes in numbers of kids
- **EACH VOLUNTEER CAN COMMIT TO ONE PARTICULAR DAY IN A WEEK INSTEAD OF FOUR, AND IT WILL BE IN A SINGLE CENTRAL LOCATION: THE SCIENCE CENTER.**

SO I AM ASKING YOU TO VOLUNTEER YOUR TIME AND LABOR TO SUPPORTING EIC IN THIS NEW APPROACH AND TO TELL ME (JPURCHASE@COX.NET) HOW MANY DAYS PER WEEK OR PER MONTH YOU WOULD BE AVAILABLE. IF YOU CAN ALSO SPECIFY WHICH WEEKDAY(S) YOU COULD SUPPORT, ALL THE BETTER. You are also welcome to email me any questions before making a commitment.

We will be starting the Lab as a pilot program at the beginning of September and fleshing out the operational details with the Science Center during the September pilot program before running full tilt for the rest of the school year.

I am looking forward to working with you, the rest of the EIC team, and the Science Center in this exciting new Science Lab venture!

John F. Purchase

Arizona Science Lab Leader

IEEE TISP/EIC

jpurchase@cox.net

(480) 921-3217



THE ARIZONA SCIENCE LAB AT THE ARIZONA SCIENCE CENTER

The Arizona Science Center and IEEE Teacher In Service Program / Engineers In The Classroom have teamed to present the Arizona Science Lab at the Science Center:

- ❖ THIS WHOLE PROGRAM IS ABSOLUTELY FREE TO THE STUDENTS, TEACHERS AND SCHOOLS
- ❖ This is a true laboratory facility in a central location for the Phoenix area schools
- ❖ The teachers bring their grade 5 to 8 science class (up to 60 students) to the Arizona Science Lab for the day
- ❖ Each Lab Workshop uses a lab setting to conduct a project-based lesson plan, complete with demonstrations, lecture and a construction project in a single 4 hour session (excluding breaks)
- ❖ Each Workshop is conducted by retired engineers who
 - Are highly qualified in math, physics, computers, software, etc.
 - Have “real world applications” experience and can relate the theory being taught to the everyday application
- ❖ The teachers choose a Lab Workshop from a list of ready-to-run Workshops that support the Arizona Science Education Content Standards
- ❖ Each Workshop emphasizes the “Wow!” factor of hands-on construction projects

Building sail boats



Building water wheels



Building electric motors



Building solar powered cars



Building bottle rockets



FOR MORE INFORMATION, CONTACT:

JOHN PURCHASE, SCIENCE LAB LEADER JPURCHASE@COX.NET

480-921-3217



**“Helping Students Transfer
What Is Learned In The
Classroom To The World Beyond”**



Women In Engineering Affinity Group (WIE)

The IEEE Phoenix Section supports establishing a local **Women in Engineering (WIE) Affinity Group**. Before moving forward with the process, we would like to ascertain the level of interest in the area of the Phoenix Section. If you see value in having this group and if you would be interested in participating in local WIE Affinity Group activities, please contact Shamala Chickamenahalli (shamala@ieee.org), Lesley Polka (lesley.a.polka@intel.com) and Diane Watkins (diane.watkins@srpnet.com).

The IEEE WIE Affinity Group's mission is to inspire, engage, encourage and empower IEEE women worldwide with a vision of creating a community of IEEE women and men innovating the world of tomorrow. More information about IEEE WIE can be found at their website:

http://www.ieee.org/membership_services/membership/women/women_about.html

Looking forward to hearing from you,
Shamala, Lesley and Diane



IEEE Phoenix Section
Women in Engineering
Affinity Group



In May, the IEEE Phoenix Section submitted the paperwork to the national office to establish a local **Women in Engineering (WIE) Affinity Group**. We held a kick-off event on May 20, 2011, at the Embassy Suites – Biltmore in Phoenix in conjunction with the 2011 international IEEE WIE committee meeting, held the same weekend at the same venue. Our local group was pleased to host an audience of about 50 that included IEEE WIE committee members from around the world as well many local woman and men interested in our theme for the evening: “Together We Lead: Locally, Nationally, and Internationally.” Our three speakers for the evening were:

- Dr. Ramalatha Marimuthu, 2011 IEEE WIE Committee Chair
- Dr. Jan Belt, Chairman, Agilesys
- Dr. Karen Panetta, IEEE Fellow & Editor-in-Chief of the IEEE WIE Magazine

Our speakers did a great job of inspiring the audience with their experiences in creating positive change in their communities through science, engineering and technology.

The IEEE Phoenix Section WIE AG organizing committee held a Fall 2011 planning meeting in June. Our goal is to host at least one event per quarter throughout the year focused on the various technical, career and humanitarian aspects of the IEEE WIE mission. For the immediate future, we are planning a September outreach event to local colleges and a December event at a local women’s shelter. As more details become available, we will publish them through the Megaphone and to our distribution list. If you would would like to be added to our distribution list, please contact Lesley Polka (lesley.a.polka@intel.com).

If you would be interested in helping to organize any of our activities or have suggestions for other activities or speakers for future events, please feel free to contact any of our organizing committee members:

- Shamala Chickamenahalli (shamala@ieee.org)
- Lesley Polka (lesley.a.polka@intel.com)
- Diane Watkins (diane.watkins@srpnet.com)
- Joy Harris (jharris@exponent.com)
- Barbara McMinn (barbara.mcminn@aps.com)

The IEEE WIE Affinity Group’s mission is to inspire, engage, encourage and empower IEEE women worldwide with a vision of creating a community of IEEE women and men innovating the world of tomorrow. More information about IEEE WIE can be found at: http://www.ieee.org/membership_services/membership/women/women_about.html.



Phoenix Chapter of the IEEE Computer Society

August, 2011

News

- The July meeting was well attended and featured a detailed and interesting presentation by Mark Brecher on the state of contemporary virtualization software and its applications.

Future Events

2011

- September 7 – Chapter meeting, DeVry University; speaker Mike Andrews, “**Sentri II Surveillance Platform**”
- November 1 (note day change: Tuesday) – Chapter meeting, DeVry University; speaker Kristy Westphal, “**Mobile Device Forensics**”; also, chapter elections for 2012

2012

- January 11 – Chapter meeting, DeVry University; speaker TBD
- March 7 – Chapter meeting, DeVry University; speaker TBD

Meetings start at 6:00 pm with networking and light refreshments in the courtyard followed by the presentation at 7:00 pm. DeVry University is located at 2149 W Dunlap Avenue, Phoenix.

Visit the CS Chapter website for the latest information: <http://ewh.ieee.org/r6/phoenix/compsociety/>.
For brief announcements regarding upcoming events we are also on Twitter: @IEEECS_PHX

If you would like to suggest a topic or speaker for any of our future meetings, please contact one of the chapter officers:

Jerry Crow (jerry.crow@computer.org)
Brad Morantz (bradscientist@ieee.org)
Audrey Skidmore (askidmore@computer.org)
Diane Smith (sdianesmith@computer.org)



INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

WAVES AND DEVICES PHOENIX CHAPTER

<http://ewh.ieee.org/r6/phoenix/wad/>

2011 Calendar



Date	Time	Location	Topic / Title / Status	Speaker	Affiliation
17-Jan	5:00 PM	Freescale	1) Electromagnetic Band Gap (EBG) Structures in Antenna Engineering: From	1) Dr. Yahya Rahmat-Samii	1) UCLA
18-Feb	4:00 PM	ASU GWC487	Miniaturized Directional Microphones and Microspeakers for Hearing Aids Applications	Dr. Junseok Chae	ASU
28-Feb	1:00 PM	ASU GWC487	Joint Meeting With SSCS: Technology Challenges of Integrated	Dr. Shamala A. Chickamenahalli	Intel
24-Mar	5:30 PM	ASU GWC487	Semiconductor Device Characterization and Failure Analysis	Dr. Dieter Schroder	ASU
18-Apr	1:30 PM	ASU	Analog-to-Digital Converters for Software-Definable Radios	Dr. Doug Garrity	Freescale
2-May	6:00 PM	ASU	Modeling and Simulation of Submillimeter Wave Semiconductor Devices	Dr. Stephen Goodnick	ASU
29-Jun	6:00 PM	ASU	Radio Communications Systems on Next Generation Manned Space Vehicle	Mr. William Boger	General Dynamics
17-Aug	Noon	ASU	CMOS Switched-Capacitor Circuits: Recent Advances in Bio-Medical and RF Applications	Dr. David J. Allstot	Univ. of Wash
18-Aug	6:00 PM	Freescale	Advanced Silicon Technology and MEMS Reliability	Dr. Jeremy Muldavin	MIT Lincoln Labs
Oct (TBD)	TBD	ASU	Analysis, Design and Measurements of Flexible Bow-Ties and High-Impedance Surfaces	Dr. Constantine Balanis	ASU
Oct (TBD)	TBD	TBD	Wide Band Gap Materials & Applications	Dr. Chuck Weitzel	Consultant
Nov (TBD)		Agilent/Freescale	Multiport Vector Network Analyzer: From the beginning to modern signal integrity applications	Prof. Andrea Ferrero	Politecnico di Torino



INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

ASU Connection One

IEEE Waves and Devices - Phoenix Chapter

IEEE Solid State Circuits Society - Phoenix Chapter

IEEE Communications Society - Phoenix Chapter

Meeting Free & Open to Non-IEEE Members

12:00noon to 1:00 pm, Wednesday, Aug 17, 2011

Arizona State University

Engineering Research Center, ERC 490

551 E. Tyler Mall, Tempe, AZ

CMOS Switched-Capacitor Circuits: Recent Advances in Bio-Medical and RF Applications

Dr. David J. Allstot, Dept. of Electrical Engineering Univ. of Washington

Abstract

The switched-capacitor technique has been used in high-volume data conversion and signal processing ICs for more than three decades. It is also ubiquitous in RF transceiver circuits because it uses capacitors, which are area-efficient native devices in CMOS technologies, and MOSFETs operating as switches.

The RF power amplifier dissipates a large fraction of the total power of a transceiver because of its low efficiency. Despite more than two decades of intensive research, the challenge of on-chip RF PAs with high efficiency in digital-friendly CMOS technologies has not been met. Switching PA topologies with relatively high efficiency have gained momentum, and relatively high output power is being delivered using power combining techniques. Supply regulation techniques have enabled higher efficiency when amplifying non-constant envelope modulated signals. A new paradigm—the switched-capacitor RF power amplifier—which meets many of the remaining challenges is described.

Body-area-networks (BAN) that integrate multiple sensor nodes in portable and wearable bio-medical systems are revolutionizing healthcare. A typical BAN comprises several bio-signal and motion sensors and uses ultra-low-power short-haul radios in conjunction with nearby smart-phones or handheld devices (with GPS capabilities) to communicate via the internet with a doctor or other healthcare professional. Higher energy efficiency is critical to the development of feature-rich, wearable and reliable personal health-monitoring systems.

The amount of data transmitted to the smart-phone increases as more sensors are added to the BAN. Because the energy consumed for RF transmission is proportional to the data rate, it is advantageous to compress the bio-signal at the sensor prior to digitization and transmission. This energy-efficient paradigm is possible using compressed sensing—a new sampling theory wherein a compressible signal can be acquired using only a few incoherent measurements. For ECG signals, for example, compression factors up to 16X are achievable which means similar reductions in energy consumption. The second part of this talk will overview compressed sensing techniques and describe a switched-capacitor analog front-end for bio-signal acquisition.

Biography: David J. Allstot received the B.S. from the Univ. of Portland, the M.S. from Oregon State Univ. and the Ph.D. from the Univ. of California, Berkeley. He has held several industrial and academic positions and has been the Boeing-Egtvedt Chair Professor of Engineering at the Univ. of Washington since 1999. He was Chair of the Dept. of Electrical Engineering from 2004 to 2007. Dr. Allstot has advised approximately 100 M.S. and Ph.D. graduates, published about 300 papers, and received several awards. He has also been active in service to IEEE.

Date: Wednesday, Aug 17, 2011

Time: 12:00noon to 1:00 pm Presentation
Pizza will be served

Location: Arizona State University, Engineering Research Center, ERC 490, 551 E. Tyler Mall, Tempe
<http://www.asu.edu/map/interactive/?campus=tempe&building=ENGR>

For more information: Steve Rockwell (WAD Chapter Chair) (480) 241-8891 steve.rockwell@ieee.org
Bertan Bakkaloglu (ConnOne Co-director) (480) 727-0293 bertan.bakkaloglu@asu.edu
David Frakes (ComSoc Chapter Chair) (480) 727-9284 dfrakes@asu.edu
Mohamed Arafa (SSCS Chapter Chair) mohamed.arafa@intel.com

WAD Website: <http://ewh.ieee.org/r6/phoenix/wad/>

Connection ONE: <http://www.connectionone.org/>

IEEE Meetings: http://meetings.vtools.ieee.org/meeting_view/list_meeting/7577

SSCS Website: http://webinabox.vtools.ieee.org/wibp_home/index/CH06227



INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

WAVES AND DEVICES - PHOENIX CHAPTER

Meeting Free & Open to Non-IEEE Members
6:00 PM, Thursday, August 18th, 2011
Freescale Semiconductor
2100 E. Elliot Rd., Tempe, AZ
Group Conference Room



Advanced Silicon Technology and MEMS Reliability

Dr. Jeremy Muldavin

Assistant Group Leader
MIT Lincoln Laboratory
Advanced Silicon Technology Group (G88)
muldavin@ll.mit.edu

Abstract

This talk will highlight some of the advanced Si technologies being developed at MIT Lincoln Laboratory, including FDSOI CMOS for extreme environments, 3D integration, digital focal planes, RF MEMS and microfluidics. RFMEMS reliability and science will be covered more detail.

RFMEMS technologies have been developed by many researchers and companies over the last 10 years. The RF excellent performance of these devices and circuits has been clearly demonstrated. Hero results for reliability have been demonstrated, several achieving over 1 trillion cycles. Reliability for DoD and commercial applications is still an issue for RF MEMS. Packaging, surface conditions, and ambient environments play a key role. This talk will discuss some of the successful RF MEMS switch designs and applications as well as provide insight to reliability aspects of these devices.

Biography

Jeremy Muldavin received his BSE in Engineering Physics from the University of Michigan in 1995 where he performed research in the area of high energy spin physics. He went on to receive his MSE and PHD (2001) in Electrical Engineering with a major in Electromagnetics and a minor in Communications. His graduate research focused on micro-machined circuits and devices for RF and millimeter-wave circuit and antenna applications.

He is currently an Assistant Group Leader of the Advanced Silicon Technology Group at MIT Lincoln Laboratory where he has continued his interest in RF micro-electro-mechanical-systems (MEMS) design, fabrication, and modeling as well as 3D integrated circuits, advanced read-out integrated circuits (ROIC), and flexible electronics.

Dr. Muldavin has served for 9 years on the IEEE Radio & Wireless Symposium Steering Committee, for four years as a chair of the IEEE MTT-S Boston Section, and served as the Registration Chair for the 2009 IEEE International Microwave Symposium, and received the Outstanding Young Engineer Award from the MTT-S in 2011.

Date: Thursday, August 18, 2011

Time: 6:00pm Presentation; Pizza will be served following the Seminar

Location: Group Conference Rm, Bldg 94, Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ
Use Freescale Main Entrance (South) facing Elliot Road

For more information, contact:

Steve Rockwell (WAD Chapter Chair) (480) 241-9891

Haolu Xie (Chapter Publicity) (480) 413-5644

steve.rockwell@ieee.org

haolu.xie@ieee.org

WAD Website: <http://ewh.ieee.org/r6/phoenix/wad/>

Advanced Silicon Technology and MEMS Reliability

Dr. Jeremy Muldavin

Assistant Group Leader
MIT Lincoln Laboratory
Advanced Silicon Technology Group (G88)
muldavin@ll.mit.edu

Abstract

This talk will highlight some of the advanced Si technologies being developed at MIT Lincoln Laboratory, including FDSOI CMOS for extreme environments, 3D integration, digital focal planes, RF MEMS and microfluidics. RFMEMS reliability and science will be covered more detail.

RFMEMS technologies have been developed by many researchers and companies over the last 10 years. The RF excellent performance of these devices and circuits has been clearly demonstrated. Hero results for reliability have been demonstrated, several achieving over 1 trillion cycles. Reliability for DoD and commercial applications is still an issue for RF MEMS. Packaging, surface conditions, and ambient environments play a key role. This talk will discuss some of the successful RF MEMS switch designs and applications as well as provide insight to reliability aspects of these devices.

Biography

Jeremy Muldavin received his BSE in Engineering Physics from the University of Michigan in 1995 where he performed research in the area of high energy spin physics. He went on to receive his MSE and PHD (2001) in Electrical Engineering with a major in Electromagnetics and a minor in Communications. His graduate research focused on micro-machined circuits and devices for RF and millimeter-wave circuit and antenna applications.

He is currently an Assistant Group Leader of the Advanced Silicon Technology Group at MIT Lincoln Laboratory where he has continued his interest in RF micro-electro-mechanical-systems (MEMS) design, fabrication, and modeling as well as 3D integrated circuits, advanced read-out integrated circuits (ROIC), and flexible electronics.

Dr. Muldavin has served for 9 years on the IEEE Radio & Wireless Symposium Steering Committee, for four years as a chair of the IEEE MTT-S Boston Section, and served as the Registration Chair for the 2009 IEEE International Microwave Symposium, and received the Outstanding Young Engineer Award from the MTT-S in 2011.

Date: Thursday, August 18, 2011

Time: 6:00pm Presentation; Pizza will be served following the Seminar

Location: Group Conference Rm, Bldg 94, Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ

Use Freescale Main Entrance (South) facing Elliot Road

For more information, contact:

Steve Rockwell (WAD Chapter Chair) (480) 241-9891

steve.rockwell@ieee.org

Haolu Xie (Chapter Publicity) (480) 413-5644

haolu.xie@ieee.org

WAD Website: <http://ewh.ieee.org/r6/phoenix/wad/>



CALL FOR PAPERS

2011 BIPOLAR/BiCMOS CIRCUITS AND TECHNOLOGY MEETING

Atlanta, Georgia, USA

<http://2011.ieee-bctm.org>

Short Course: Sunday, October 9, 2011, Conference: Monday and Tuesday, October 10-11, 2011

The Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) is a forum for technical communication focused on the needs and interests of the bipolar and BiCMOS community. Papers covering the design, performance, fabrication, testing and application of bipolar and BiCMOS integrated circuits, bipolar phenomena, and discrete bipolar devices are solicited. All papers must be suitable for a twenty-minute presentation. Text and figures must not have been presented at other conferences or published in any scientific or technical publications prior to BCTM.

Publication in the BCTM 2011 Proceedings does not preclude publication in an IEEE journal, and authors are encouraged to do so. A Special Issue of the *IEEE Journal of Solid-State Circuits* will include selected papers from BCTM 2011.

Papers are solicited in the following areas

ANALOG / DIGITAL CIRCUIT DESIGN: Analog ICs - Digital ICs - Mixed analog/digital ICs - Novel design concepts and methods - DACs and ADCs - Amplifiers - Integrated filters - Communications ICs - Sensors - Gate arrays - Cell libraries - Voltage references - Analog subsystems within a VLSI chip - Packaging of high-performance ICs. High-voltage ICs - Automotive electronics, disc drives, display drivers, power supplies, electric utility, medical electronics, motor controls, regulators, amplifiers, converters, aerospace electronics.

RADIO FREQUENCY CIRCUIT DESIGN: Low Noise Amplifiers - Automatic gain control - VCOs - Mixers - Active gyrators - Power amplifiers - RF DMOS-based circuits - Switches - Noise suppression techniques - Frequency synthesizers - Radio subsystems - Packaging of RF components - Designing with integrated passive components at RF frequencies - Millimeter-wave circuits and systems.

WIRELINE COMMUNICATIONS: LAN, WAN, FDDI, Ethernet, Metro, Fiber channel, SONET, ATM, ISDN, xDSL, optical data links - Power-line/phone-line networks - Cable modems, broadband circuits - MUX/DEMUX - Clock and data recovery - Error coding and correction - Crosspoint switches - Laser and modulator drivers - Preamplifiers - AGC amplifiers - Decision circuits - Equalizers - Optical networking ICs.

DEVICE PHYSICS: New device physics phenomena in Si, SiGe, and III-V devices - Device design issues and scaling limits - Hot electron effects and reliability physics - Transport and high field phenomena - Noise - Linearity/Distortion - Novel measurement techniques - Operation in extreme environments (low and high temperatures, radiation effects).

MODELING / SIMULATION: Improved BJT and HBT models - Behavioural modeling techniques - Parameter extraction methods and test structures - De-embedding techniques - RF and thermal simulation techniques - Modeling of passives, interconnect and packages - Statistical modeling - Device, process and circuit simulation. CAD/modeling of power devices, packaging of power devices, and ESD phenomena.

PROCESS TECHNOLOGY: Advances in processes and device structures demonstrating high speed, low power, low noise, high current, high voltage, etc. BiCMOS processes - Advanced process techniques - Si and Si-C homojunction bipolar/BiCMOS devices, III-V and SiGe heterojunction bipolar/BiCMOS devices. Manufacturing solutions related to Bipolar and BiCMOS yield improvements. Fabrication of high-performance passive components, including, MEMs. Process technology related to discrete and integrated bipolar/BiCMOS power devices, IGBT, RF power devices including DMOS. Wide bandgap bipolar devices (i.e. SiC, GaN, GaAs etc.) and related process technology.

STUDENT paper submissions are highly encouraged. Papers must be clearly marked as 'STUDENT SUBMISSION' in the abstract cover sheet to be eligible for the Best Student Paper Award.

If you know of people who may have a paper to contribute please bring this Call for Papers to their attention.

IMPORTANT DEADLINES FOR AUTHORS

Monday, May 2, 2011 Deadline for receipt of abstract and summary

Friday, June 10, 2011 Notification of acceptance to be sent by email

Friday, July 8, 2011 Final proceedings manuscript due

SUBMISSION AND CONTACT INFORMATION

Visit the conference website: <http://2011.ieee-bctm.org>, or contact:

Jan Jopke, Conference Manager, CCS Associates, 6611 Countryside Drive, Eden Prairie, MN 55346, USA

TEL: 1-952-934-5082, FAX: 1-952-934-6741 E-mail: ccsevents@comcast.net.

Semiconductor Electrical Test Engineer – Tempe

Premier Semiconductor Services LLC www.premiers2.com

Position Open: Electrical Test Engineer

An established National Semiconductor Company has an immediate opening for an Electrical Test Engineer who has at least five years assembly design experience and/or electrical bench testing experience. The Engineer will be working in conjunction with Engineers at the Company's other locations. This Engineering position will require very little travel to the Company's other locations. The candidate must be detail oriented, able to multi-task, be a quick learner and able to use a computer. The candidate should also be team-oriented, reliable and have a positive attitude. Compensation will depend on experience and qualifications for this position.

The Company has a competitive compensation and benefit package which includes Medical Insurance, Holiday, Vacation, 401(k) and other benefits. The Company is an equal opportunity employer, dedicated to promoting a culturally diverse workforce.

Duties: Given a technical drawing or datasheet schematic, the Engineer must be able to breadboard a basic Integrated Circuit (IC) for testing (analog, digital, and mixed signal components), and understand the appropriate test equipment to measure data from that IC. Upon completion of the IC tests, the Engineer will complete a general test report consisting of test setup conditions and parameters, observations, and assembly of non-automated test data to report findings and results.

Required Skills: 5 years assembly design and/or bench testing experience in which the following skills and experience were utilized:

1. Able to use Multimeters, Oscilloscopes, Function Generators, LCR Meters, and Curve Tracers.
2. Able to read schematics and diagrams; able to breadboard small electrical circuits for limited functional testing of active and discrete components.
3. Able to demonstrate a working knowledge of electrical principals (ohms law, SI units, and technical math skills and statistical analysis).
4. Able to easily use Microsoft Office products including Word and Excel.
5. Have a strong work ethic and ability to operate with minimal instructions (after training period).
6. Have ability to direct and lead lab technician subordinates to ensure timely progression of work load and related tasks.
7. Able to use Instrumentation and Data Acquisition equipment, LabView or Signal Express software.

The ideal candidate: The person should be able to demonstrate an ability to read a basic component datasheet to create a working test circuit, and be able to make appropriate connections from that circuit to bench test equipment for data measurement. Knowledge of basic electrical theory including ohms law and basic math skills are necessary to perform in this position.

If interested please Apply
Premier Semiconductor Services LLC
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www.premiers2.com

Global Patent Solutions, LLC (GPS)

Patent Researcher/Searcher – Electrical/Computer/Communications

Global Patent Solutions, LLC (GPS) is an intellectual property research and consulting firm founded to meet the demanding needs of Inventors and IP professionals around the world for high-quality patent research and consulting. From our headquarters in Scottsdale, AZ, we currently service a global client-base of IP Attorneys, Patent Agents, Business Leaders, R&D Teams, Universities, Entrepreneurs and Inventors.

This is not your ordinary, run-of-the-mill research position. Each project is unique and possesses a new challenge for you to tackle. You must be able to assess and analyze the best way to approach a project. Previous patent knowledge is great; however, it is not required. We are willing and able to train.

However, candidates applying for this position MUST have previous experience or extensive knowledge in one or more of the following technical areas:

- Wireless Networking (Cellular, CDMA, 4G, 3GPP, LTE)
- Computer Networking (Ethernet, Packet Formation, Routing Algorithms, etc)
- Computer Vision / Image processing (Feature-based, Learning Algorithms, Classifiers, etc.)
- GPS/Satellite Positioning
- Display/Pixel Technology
- Encryption / Cryptography (digests, public/private keys, etc.)
- MEMS or NANO technology

We are hiring people who desire to continuously learn and put that knowledge to use to get quick results to meet our clients' deadlines.

The Patent Researcher primarily will perform research of invention concepts related to the technologies listed above using a variety of databases and compile formal search reports to demonstrate findings to clients. A majority of work requires in-depth reading, writing and working on computers.

The position entails:

- Quickly reviewing and gaining an understanding of technical aspects of client inventions and/or technical search concepts
- Creating research strategies that best utilize time and resources when executed
- Performing extensive database research
- Reviewing, gathering and analyzing technical literature
- Reporting research findings in a timely and high-quality manner

Requirements: BS, MS or PHD in Engineering or equivalent experience required.

We are a growing company located in Scottsdale, Arizona. We are primarily interested in hiring full-time positions in our Scottsdale facility. It is possible, though not preferred, that unique circumstances would lead us to also consider an employee working remotely; this position, however, must be filled within the U.S. Part-Time employment is also a possibility for the right individual.

We provide the following benefits:

- Competitive Salary - Compensation commensurate with capabilities and experience
- 10 Days of Vacation Leave

- 5 Days of Sick Leave
- 10 Paid Holidays
- Full Dental & Medical Insurance Coverage
- Retirement Plan

If you can manage yourself, as micro-managing is not our style, and you are motivated to get results in a timely manner, this could be a great opportunity for you to learn and grow with a quality-driven company.

This position requires you to:

- Meet and exceed client needs and deadlines by providing viable research solutions and being reliable and dedicated to getting the job done.
- Quickly, continuously and concisely Learn, Interpret, Comprehend, Retain and Apply technical abilities. Enjoy an ongoing learning and computer-based environment that is dedicated to quality.
- Thrive in ambiguity and to self-manage, prioritize and take pride in the work with the team and individually.
- Proactively, confidently and effectively communicate with internal team members and external clients. Don't be afraid to ask for help. Be supportive and helpful to others on all levels.
- Actively participate as a team member to best serve clients and the team.

You will mostly work on your own, but we do have a wonderful, supporting staff that requires some teamwork on occasion. We are looking for an efficient and flexible team player who likes to have fun too!

To apply please, please email your cover letter and resume to: robb.evans@globalpatentsolutions.com
You can also learn more about us by visiting our Website: www.globalpatentsolutions.com



IEEE-USA Government Fellowships:

Linking Science, Technology & Engineering Professionals with Government

(<http://ieeusa.org/policy/govfel/default.asp>)

Each year, IEEE-USA sponsors three government fellowships for qualified IEEE members. The fellows - chosen by the IEEE-USA Government Fellows Committee and confirmed by the Board - spend a year in Washington serving as advisers to the U.S. Congress and to key U.S. Department of State decision-makers. Known as either a Congressional Fellowship or an Engineering & Diplomacy Fellowship, this program links science, technology and engineering professionals with government, and provides a mechanism for IEEE's U.S. members to learn firsthand about the public policy process while imparting their knowledge and experience to policymakers.

2012 Application materials are now available online. **The deadline is March 18, 2011**

Application Kit for 2012 Congressional Fellowship

http://ieeusa.org/policy/govfel/documents/cfappkit12_000.doc

Application Kit for 2012 Engineering & Diplomacy (State Department) Fellowship

http://ieeusa.org/policy/govfel/documents/Stateappkit12_000.doc



2011 IEEE Phoenix Section Calendar

The calendar is updated by the Vice Chair on a rolling basis.

- April 2011
 - Student-Industry Mixer
 - MicroMouse registrations due to Southwest Area: TBD
 - Student papers due to Southwest Area: TBD
 - Southwest Area Spring meeting incl. Student Paper and MicroMouse contests: TBD
 - Nominating Committee formed for election of next year's Section officers
 - At least three members that are not Section officers (Chapter officers okay)
- May 2011
 - Student Branch reports to IEEE HQ and Student Activities Chair due: May 1, 2011
 - Call for Nominations issued by Nominating Committee
- June 2011
 - Review meeting schedules of Chapters
 - Nominations received by Nominating Committee
- July–August 2011
 - Summer break
- IEEE Congress August 19 -22, San Francisco
- September 2011
 - Student Branches send annual plan of activities to IEEE
 - Annual Banquet: Determine date, confirm hotel, speaker
 - Announcement of Student Paper Contest
 - Announcement of Student Scholarships
 - Call for nominations for awards
 - Categories: Young Engineer/GOLD, Engineer, Company, Educator
- October 2011
 - Announcement of Student Paper Contest
 - Announcement of Student Scholarships
 - Call for nominations for awards: see September
 - Southwest Area Fall meeting: TBD
- November 2011
 - Election of new officers
 - 2011 budget proposal
 - Start ad for Student Paper Contest and Scholarships
 - For dates see under February
 - Student Industry Mixer: TBD
- December 2011

- Report of Section activities for 2011
- Appoint chairs of Section committees
- Student Scholarship applications due: TBD
- Annual Banquet: Finalize speaker
- Annual Banquet: E-mail program



Phoenix Section Executive Committee Meeting

Venue: Phoenix Airport Hilton 2435 S 47th St, Phoenix, AZ, 85034 ([map](#))
Tel.: 480-804-6017

More Info: Meetings are held on the first Tuesday of the month, 6–8 PM.
- Except for July & August

All interested IEEE members are welcome to attend.

Contact: Jim Hudson, Phoenix Section Chair
jim.hudson@srpnet.com

IEEE Phoenix Section Nomination of Officers



The IEEE Phoenix Section is seeking nominations for the following elected Section officer positions for the 2012 term:

- Chair
- Vice Chair
- Secretary
- Treasurer

Additionally, the Nominating Committee is seeking candidates for the following non-elected appointed standing committee chair positions for the 2012 term:

- Publicity
- Membership
- Student Activities
- Conferences
- Awards
- Inter-Society
- PACE (Professional Activities Committees for Engineers)
- TISP (Teacher In-Service Program)
- Web Master

Section officers must be IEEE members. Self-nominations are acceptable.

Please send nominations or any questions to Steve Rockwell (e-mail steve.rockwell@ieee.org), copying also Nominating Committee members Mike Andrews (e-mail: m.andrews@ieee.org) and Mohamed Arafa (e-mail: mohamed.arafa@intel.com).

Section members are urged to submit your nominations by no later than September 1.

Sincerely,
Steve Rockwell
Chair, Nominating Committee, Phoenix Section

Section Officer Job Descriptions

Section Chair

The Section Chair shall serve as Chair for all meetings of the Section, the Section Committee and the Section ExCom where such ExCom exists.

Roles:

- Preside at meetings of the Section Executive Committee
- Represent the Section at IEEE gatherings
- Represent the Section at Regional Committee Meetings and vote on issues on the basis of the best interest of IEEE

Vice Chair

The Section Vice Chair shall assist the Chair in the coordination of all Section activities. At the request of the Section Chair or in the absence of the Section Chair, the Section Vice Chair shall chair meetings of the Section, Section Committee or Section ExCom.

Secretary

The duties of the Section Secretary shall include correspondence, the keeping of the minutes of the Committee meetings, mailing notices, and submission of meeting and officer reports to the Member and Geographic Activities Department at the end of each year and such other duties as are assigned to him/her by the Chair.

Treasurer

The duties of the Section Treasurer shall include the development of a Section budget for approval by the Section, accounting of all Section funds, keeping financial records, and submitting the Financial Operations Report of the Section to the IEEE Staff Director, Financial Services.

Publicity

- Publish and distribute monthly section newsletter
- Maintain section email lists
- Support chapter publicity submissions to the the IEEE E-Notice system

Membership Chair

- Monitoring a current record of membership.
- Analyzing membership trends.
- Ensure adequate supplies of membership development materials available for distribution (chapter meetings, conferences, job fairs, etc.).
- Coordinating membership exhibits for local meetings and conferences, soliciting materials for exhibits, indentifying volunteers to staff booth.

Student Activities Chair

- Coordinate and support student chapters by working with the student chapter representatives and their faculty advisers.
- Organize the annual student paper competition
- Organize the annual student scholarship awards program

Conferences Chair

- Support and act as liaison between the section and locally held IEEE affiliated conferences
- Maintain calendar of IEEE related conference events on the section website calendar

Awards Chair

- Plan, coordinate, and organize the annual awards banquet

Inter-Society Chair

- Coordinate and act as liaison between section and other engineering or relevant organizational entities

PACE (Professional Activities Committees for Engineers) Chair

- Coordinate and support professional and career developmental activities

TISP (Teacher In-Service Program) Chair

- Coordinate the local TISP program

Web Master Chair

- Maintain and update the Section website as needed

THE NEW TOOL FOR A SUCCESSFUL JOB SEARCH

MATCHING YOU TO YOUR DREAM JOB

Creating a better resume, targeting the right employers and having more effective interviews are all elements of finding that ideal next job. With that framework, the Phoenix Section has created a partnership with Top Talent Consulting and Target Training International designed to increase your chances of getting hired for the job you're really looking for...a job that not only uses your technical talents but matches your personal skills.

It begins with the creation of your behavioral profile. Free to IEEE members, the results will enable you to improve your resume and help companies find you. The profile measures 55 soft skill requirements in jobs and in people. When the jobs and people match, the synergy begins. Top Talent Consulting will shop your skills against the requirements of their clients...companies hiring engineers and technical professionals. Target Training International is the only company that uses this time-tested, scientific knowledge to match people to jobs. Their system is designed to identify your talents and match them to your ideal job, which ensures a culture that matches your needs and provides natural on-the-job motivation.

As an IEEE member, there's no cost you! Normally the behavioral profile costs \$90.00 but this is a benefit for Section members. Your detailed personal profile includes General Characteristics, Value to the Organization, Do's and Don'ts on Communicating, Ideal Environment, Perceptions, Descriptors, Keys to Motivating, and Action Plan and much more.

What else is in it for you? The immediate benefits to you include:

1. An increased understanding of your strengths
2. The ability for you to articulate your strengths in your resume and interview
3. Improving your resume
4. Utilizing key action words and phrases in your resume that will increase it's power
5. Conduct a stronger interview
6. Have access to resources to assist you in your job search

When you're finished, Top Talent Consulting will place your resume and skills will be placed in front of many prospective employers and recruiters based on your best job fit!

For more information and to receive your profile code, contact Mike Andrews, m.andrews@ieee.org.

IEEE ENERGY CONVERSION CONGRESS & EXPOSITION



SEPTEMBER 17-22, 2011

HYATT REGENCY PHOENIX & PHOENIX CONVENTION CENTER IN PHOENIX, ARIZONA

www.ecce2011.org

Energy Conversion Innovation for a Clean Energy Future — T E N T A T I V E A G E N D A

SATURDAY, SEPTEMBER 17, 2011										
2:00 pm – 5:00 pm Registration Open										
SUNDAY, SEPTEMBER 18, 2011										
7:00 am – 7:00 pm Registration Open										
Tutorials Group 1 • 8:30 am – 12:00 pm										
T1-1 Practical Aspects in Modern Design Process of Electric Motors	T1-2 Understanding of Electrical Concepts in Wind Turbines and Photovoltaic Arrays	T1-3 Carrier Based PWM Methods For AC/DC/AC and AC/AC Power Conversion Systems	T1-4 Reliability of IGBT Modules in Energy Conversion	T1-5 Ultra-capacitors in power conversion: analysis, modeling and design in theory and practice	T1-6 Inductive wireless power transmission					
12:00 pm – 1:00 pm Lunch on Own										
Tutorials Group 2 • 1:00 pm – 5:00 pm										
T2-1 Design and Modeling of Dual Fed Asynchronous Generators: Application to Wind Power Generation	T2-2 Multilevel Converters: Recent Development of Topologies and PWM Control Methods	T2-3 Artificial Intelligence Techniques in Power Electronics and Motor Drives	T2-4 Practical Design and Challenges of Traction Inverter for Electrified Vehicles	T2-5 Designing with Lithium-ion Batteries: An Engineering Perspective	T2-6 Design Considerations for Photovoltaic Systems Installed on Curved Surfaces					
4:30 pm – 5:00 pm New to ECCE/PELS/IAS Reception (for those new to the organizations)										
5:00 pm – 7:00 pm Opening Reception										
MONDAY, SEPTEMBER 19, 2011										
7:00 am – 7:00 pm Registration Open										
8:00 am – 10:00 am Plenary Session										
10:00 am – 10:20 am AM Break										
Breakout Sessions • 10:20 am – 12:00 pm										
A18: Solar PV Technology	L1: Power Semiconductors: Thermal Management	K1: Model-Based Sensorless Control	A11: Distributed Utility Voltage Regulation	F1: DC-DC Converters: Topologies I	J1: Induction Machines	H1: Multilevel Converters I	A30: MPPT Algorithms for Solar PV Systems	I1: Indirect AC-AC Converters I	C1: Transportation Applications: General	SP1: Wind Energy
12:00 pm – 1:20 pm Lunch on Own										
Breakout Sessions • 1:20 pm – 3:00 pm										
A1: Wind Energy: Generators and Drives	L2: Power Semiconductors: Packaging	K2: Direct Torque Control	A12: Distributed Grid Controls	F2: DC-DC Converter Controls I	J2: Thermal Analysis and Losses I	H2: Voltage Source Inverters	A21: DC-DC Converters for Solar PV Systems I	I2: Indirect AC-AC Converters II	C2: Transportation Applications: Voltage Converters	SP2: Power supply on Chip
2:00 pm – 3:20 pm PM Break										
Breakout Sessions • 3:20 pm – 5:00 pm										
A2: Wind Energy: Power Electronic Converters	L3: Magnetic Component Design & Applications	K3: Sensorless Control Issues	A13: Microgrid Controls	F3: DC-DC Converter Modeling	J3: Thermal Analysis and Losses II	H3: Inverter Control Techniques	A22: DC-DC Converters for Solar PV Systems II	I3: Modeling and Control of AC-AC Converters	C3: Transportation Applications: Infrastructures	SP3: PEV Infrastructure and Technologies
5:00 pm – 7:00 pm Expo Reception/Expo Open										
TUESDAY, SEPTEMBER 20, 2011										
7:00 am – 7:00 pm Registration Open										
8:00 am – 6:00 pm Exhibit Hall Open										
9:40 am – 10:00 am AM Break										
10:00 am – 10:30 am Industrial Seminar										
10:30 am – 12:00 pm Poster Session I										
12:00 pm – 1:20 pm Lunch in the Exhibit Hall										
1:30 pm – 2:00 pm Industrial Seminar										
2:00 pm – 3:00 pm Student Demos										
3:00 pm – 3:30 pm PM Break										
3:30 pm – 5:00 pm Poster Session II										
5:00 pm – 6:00 pm Industrial Seminar										
Rap Sessions • 7:30 pm – 9:00 pm										
Rap Session 1 Mission Impossible? A 100% renewable energy society, organized by Dr. Dan M. Ionel, 90 minutes (tentative)			Rap Session 2 Vehicle Electrification Technologies, today and tomorrow (tentative), organized by Dr. Chris Mi, 60 minutes (tentative)				Rap Session 3 Future Personal Vehicles, 2020 and beyond (tentative)			

Monday, September 19, 8:00AM-10:00AM

1

DETAILED PROGRAM**Monday, September 19, 8:00AM-10:00AM****Plenary Session**

Monday, September 19, 8:00AM-10:00AM, Room: Regency Ballroom ABCD.

Monday, September 19, 10:20AM-12:00PM**Special Session: Wind Energy**

Monday, September 19, 10:20AM-12:00PM, Room: Regency Ballroom ABCD, Chair:

10:20AM Power Electronics Converters for Wind Turbine Systems [#903]

Frede Blaabjerg, Marco Liserre and Ke Ma, Aalborg University, Denmark; Polytechnic of Bari, Italy

Transportation Applications: General

Monday, September 19, 10:20AM-12:00PM, Room: Regency Ballroom CD, Chair:

10:20AM Development of a Drive Cycle Based Evaluation Method for Variable Voltage Converter in Vehicle Electrification Applications [#988]

Lihua Chen, Liwen Xu, Nagaraj Narayanachar and Shahram Zarei, Ford Motor Company, United States

10:45AM Small-Size Light-Weight Transformer with New Core Structure for Contactless Electric Vehicle Power Transfer System [#189]

Chigira Masato, Nagatsuka Yuichi, Kaneko Yasuyoshi, Abe Shigeru and Yasuda Tomio, Saitama University, Japan; Technova Inc., Japan

11:10AM Fault-Tolerant Control of Induction Motor Drive for Automotive Belt-Alternator-Starter Application [#130]

Chandra Namuduri, Suresh Gopalakrishnan, Keith Van Maanen, Bryan Ludwig and Bonho Bae, Technical Fellow, General Motors, United States; Staff Researcher, General Motors, United States; Hybrid Systems Engineer, General Motors, United States; Hybrid Power Elect. Engineer, General Motors, United States; Staff Engineer, General Motors, United States

11:35AM Energy Efficiency in Plug-in Hybrid Electric Vehicle Chargers: Evaluation and Comparison of Front End AC-DC Topologies [#354]

Fariborz Musavi, Murray Edington, Wilson Eberle and William G. Dunford, Delta-Q Technologies Corp., Canada; University of British Columbia, Canada

Power Semiconductors: Thermal Management

Monday, September 19, 10:20AM-12:00PM, Room: Curtis AB, Chair:

10:20AM Study and realization of a high power density electronics device cooling loop using a liquid metal coolant [#126]

Mansour Tawk, Yvan Avenas, Afef Kedous-Lebouc and Mickael Petit, Phd Student, France; Dr., France

10:45AM Drift region integrated microchannel structure for direct cooling of power electronics [#225]

Kremena Vladimirova, Jean-Christophe Crebier, Yvan Avenas and Christian Schaeffer, G2Elab, France

11:10AM Thermal management of compact SMT multilayer power converters [#790]

Ivan Josifovic, Jelena Popovic-Gerber and Jan Abraham Ferreira, Delft University of Technology, Netherlands

“IEEE Phoenix Section Survey

IEEE Phoenix Section Executive Committee is requesting all IEEE Phoenix Section Members to provide their valuable inputs to help with continuous improvement of section activities. The survey can be accessed at www.ewh.ieee.org/r6/phoenix. Please download the survey and send by email to IEEE Phoenix Section Secretary, Dr. Chuck Weitzel, at c.weitzel@ieee.org. Your support in this matter will be greatly appreciated.”

“IEEE Member Grade Advancement

All IEEE members are advised to look into advancing their IEEE membership to higher grades – senior member and Fellow. Please refer to www.ieee.org for additional information, requirements, and process for obtaining senior member and fellow grades. Please contact Dr. Vasudeva P. Atluri, Membership Chair, IEEE Phoenix Section at vpatluri@ieee.org for guidance and support.”

IEEE Phoenix - Calendar of Events

You may access the IEEE Phoenix Section Calendar of Events at:

<http://ewh.ieee.org/r6/phoenix/Calendar.htm>

For inputs and updates to the Calendar, please contact the IEEE Phoenix Section Treasurer, Russ Kinner at 602-997-2353 or e-mail: r.kinner@ieee.org

Phoenix Section LinkedIn Group

If you are interested in professional networking and shared Section related updates & discussions join the [IEEE Phoenix Section Group on LinkedIn](#). Signing up only takes minutes and is free. A job board is available as well.
