The Valley Megaphone

Newsletter of the Institute of Electrical and Electronics Engineers, Inc., Phoenix Section

April 2011, Volume XXV, Number 4

Executive Committee - 2011

Chair
Jim Hudson, 480-855-8987
jim.hudson@srpnet.com

Vice Chair
Ralph Hogan, 480-774-8227
rhogan@ieee.org

Secretary
Charles Weitzel, 480-292-0531
c.weitzel@ieee.org

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Russ Kinner, 602-997-2353
r.kinner@ieee.org

Past Chair
Henning Braunisch
480-552-0844
braunisch@ieee.org

Publicity
Surinder Tuli, **480-554-8275**
Surinder.tuli@gmail.com

PACE
Mike Andrews, 480-991-1619
m.andrews@ieee.org

Membership
Vasudeva P. Atluri
480-227-8411
vpatluri@ieee.org

Student Activities
Nick Leonardi,
480-736-1970 x23
nleonardi@ieee.org

Conferences
Gouliang Xue
480-965-6218
xue@asu.edu

Awards
Vasudeva P. Atluri
480-227-8411
vpatluri@ieee.org

Inter-Society
Mike Andrews, 480-991-1619
m.andrews@ieee.org

Webmaster
Henning Braunisch
480-552-0844
braunisch@ieee.org

In this Issue of the Valley Megaphone:

Contacts:

Contents:

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
jerry8128@gmail.com

CPMT Society
Vasudeva P. Atluri
480-227-8411
vpatluri@ieee.org

Education Chapter
Martin Reisslein, 480-965-8593
reisslein@asu.edu

EMBS Chapter
TBD

EMC Society
Harry Gaul, 480-441-5321
harry.gaul@ieee.org

GOLD
David Huerta
huertanix@ieee.org

Power & Energy Society
Naim Logic, 602-236-3838
nlogic@ieee.org

Solid State Circuits
Mohamed Arafa
mohamed.arafa@ieee.org

Teacher-In-Service
Mike Poggie
mike.poggie@ieee.org

Waves & Devices Society
Steve Rockwell
steve.rockwell@ieee.org

Life Members
Barry Cummings
abarrycummings@gmail.com

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 Surinder Tuli at the above email address. Deadline for announcements and dvertisements 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://ewh.ieee.org/r6/phoenix/

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.niranjan@ieee.org

Embry-Riddle, Prescott
Chair: Tim Lemm
timothy.lemm@erau.edu
Advisor: John E. Post
postj@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 Leornardi at nleonardi@ieee.org.
- View pictures from the MicroMouse contest at the Southwest Area Spring 2010 meeting at http://picasaweb.google.com/ieeegoldphx/2010IEEESWASpringMeeting (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 made the March technical meetings so successful. More to come in April...
Please contact Chapter Chair David Frakes (dfrakes@asu.edu) to volunteer or propose a speaker for upcoming meetings.

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY
ECTC Electronic Components & RF Program Committee
CPMT RF & Wireless Technical Committee

61st ECTC May 31 – June 3, 2011
Walt Disney World Swan & Dolphin Resort
Lake Buena Vista, Florida USA

The ECTC Electronic Components & RF Program Committee and the CPMT RF & Wireless Technical Committee encourage you to submit an abstract to ECTC 2011 in the areas of passive components & networks, RF & Microwave components & modules, and subsystems. ECTC is the premier Electronic Components and Packaging conference held annually and attended by about 1000 delegates with equal participation from companies and academia. As in the past, Electronic Components, RF & Microwave, and MEMS related papers are solicited for focus sessions during this prestigious conference.

RF, Microwave, Terahertz Components & Modules

Integrated antennas, filters, baluns, tunable devices & switches; high power & high efficiency RF/Microwave power amplifiers – design, technology & high frequency characterization; module integration in semiconductor, organic, & glass substrates – System in Package, System on Chip, Package on Package, & 3D integration; shielding, isolation, nanoscale structures for enhancing performance

RFID

Design & development of miniature interconnects for HF, UHF & WiFi RFIDs; assembly & matching with antennas & passives; universal RFID modules; RFID enabled wireless sensor nodes; power scavengers & nanomaterials for autonomous RFID's; flexible/conformal materials & printing technologies; reliability & environmental issues; metal-mounted RFID assembly & integration; multiband RFID's; integration of RFID's & batteries; RFID reader packaging; "rugged" RFID packages for space & extreme environments

RF MEMS & Sensors

RFID, RF MEMS, MEMS, MEMS packaging; MEMS/NEMS-enabled sensors, nanotechnology-based sensors, MEMS-based power scavenging; low-cost "Smart House" & "Smart Skin" sensor integration & packaging

Medical Devices for Monitoring, Imaging, WPAN/WBAN & Biomedical Applications

Design, materials, processing, manufacture, modeling & characterization; UWB & THz imaging & monitoring devices; technology for integrated wireless implantable/wearable electronics, including energy harvesting, ultra-low power electronics & batteries; 3D packages for ultra-miniaturization; biocompatibility, BioMEMS & microfluidic packaging

Flexible & Printed Electronics

Printing electronics technologies up to mmW frequencies; 3D printed RF electronics modules; low cost substrates; flexible RF modules, interconnects & adhesives; integration with wearable/implantable wireless personal networks, smart fabrics; inkjet- & gravure-printed RF components; environmentally-friendly RF substrates, antennas & passives

Discrete and Embedded Electronic Components, Materials, Processing, Reliability, & Manufacturing

Design, materials, processes, & reliability considerations for discrete passive components: resistors, capacitors, inductors, & passive networks, including through silicon vias (TSV), wafer level RDL, nano materials & processes

SUBMISSIONS:

Please submit abstracts using the ECTC web site: www.ectc.net by October 15, 2010. Abstracts must comply with the guidelines outlined at the website. To have your paper considered for inclusion in the "Electronic Components & RF" focused sessions **YOU MUST SELECT**

"Electronic Components & RF" committee as your PRIMARY subcommittee preference

when you submit your abstract at the ECTC web site. Again, to have your paper considered, please do the following:

STEP #1: Submit abstract through the ECTC web site (www.ectc.net) and select **"Electronic Components & RF" as PRIMARY subcommittee** preference

STEP #2: Email abstract copy and author's email & contact information to: Craig Gaw at c.a.gaw@ieee.org & Rockwell Hsu at r.hsu@wilinx.com

Craig Gaw, Chair - CPMT RF & Wireless TC
Freescale Semiconductor Inc., c.a.gaw@ieee.org

Rockwell Hsu, Chair - ECTC Electronic Components & RF TC
Wilinx Corporation, r.hsu@wilinx.com

IEEE PES Phoenix Chapter

April 2011 Luncheon Meeting

Date:Thursday, April 21, 2011

Time:11:30 am - 11:45 noon: Registration
11:45 noon: Lunch
12:15 pm: Program

Location:SRP PERA Club (map)
1 E Continental Dr
Tempe, AZ

Speaker:Marc Sobelman - ECOtality Regional Manager

Topic:EV Charging Stations in the Phoenix Area

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 or submit your name here.
Reservations deadline is Noon on Monday, April 18, 2011.
If you have already registered for this luncheon but need to cancel, click here.

Let me know if you need more details.
Regards,
Naim
Naim Logic, Ph.D., P.E.
SRP Computer Applications
Phone: (602) 236-3838
Fax: (602) 236-4327

Phoenix Section Life Member Affinity Group

2011 May Technical Meeting

Topic: **Nuclear Power in the U.S. for the Present Decade**

Speaker: Keith Holber, Ph.D. Associate Professor in the School of Electrical, Computer and Energy Engineering at ASU. He earned his Ph.D. in nuclear engineering from University of Tennessee in 1989. Keith is the Director of the Nuclear Power Generation Program at ASU.

Summary: As of December 2010, the NRC has received 17 construction and operating license applications (COLAs) for 26 new nuclear power reactors sited primarily in the eastern U.S. Recessionary times have led to difficulty in financing such large capital projects; however, the federal government is providing loan guarantees for some new reactor construction. Simultaneously, small modular reactors are receiving considerable press. Meanwhile, the Department of Energy is withdrawing its license application for a national nuclear waste repository at Yucca Mountain, NV, while simultaneously creating a Blue Ribbon Commission on America's Nuclear Future. Furthermore, in the Southwest, there is interest in nuclear for both electricity generation and desalination.

When: Tuesday, **May 10, 2011, 11:00am – 1:00pm**

Where: **SRP's PERA Club Bighorn Room,**
1 East Continental Drive, Tempe, AZ
West of 68th St., ½ mile south of McDowell Road

Click this map link to SRP PERA Club:

http://insidesrp/pera/facilities/PERAstreetmap.pdf

RSVP: Please respond by **Friday, May 1st** to Ronald Sprague by email: rlsprague@q.com

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*
Program Chair	Ronald L. Sprague, P.E.	rlsprague@q.com
Past Chair	C Bruce Johnson	*cbj@johnsonscientificgroup.com*

March Meeting Announcement for the

Phoenix Chapter of the IEEE EMC Society

Date: Thursday, April 14th, 2011
Place: Garcia's Mexican Restaurant at Embassy Suites Hotel
Address: 4400 South Rural Road, Tempe, Arizona
Address: Just South of U.S. 60 on West side of Rural Rd.
Time: 5:30PM Social, 6PM Dinner (order off the menu), 7PM Meeting in Embassy Suites Junior Ballroom (upstairs)

Title: RTCA/DO-160 Indirect Effects of Lightning (IEL) Standards Update

Speaker: Nicholas Wright - International Sales Manager - EMC-PARTNER, AG

Abstract: This talk will address the latest changes to the DO-160 standard as it relates to the indirect effects of lightning (IEL). Discussion will include the various test setups and coupling techniques necessary when performing IEL tests.

Biography: Nicholas received his education at Worcester Technical College in England. This was followed by five years at the UK Ministry of Defense (MoD) radar establishment before entering industry where he held development and engineering posts in the military electronics sector. He moved to Switzerland and entered the civilian sector in 1990. Since then he has held Sales and Product Management positions within the EMC industry focused exclusively on transient test equipment and standards. This experience provides Nicholas with an in-depth knowledge of the evolution of all types of transient test standards as well as their likely future course. Nicholas is currently International Sales Manager for EMC Partner based in Laufen, Switzerland.

Reservations: To help us get an accurate headcount, please send an email to Harry Gaul (harry.gaul@ieee.org). There is no charge for meetings, but you pay for your own meal and drinks. Since we order off the menu, we do not need an exact number, so if you decide at the last minute, please come anyway. You don't need to be an IEEE or EMC Society member to attend -- all are welcome.

IEEE Components, Packaging and Manufacturing Technology Society
Phoenix Chapter

Tuesday, April 19th, 2011 at 6 PM

Nuclear Power Plants Safety and Grid Reliability

Mr. Harvey Leake and Mr. Munnu Bajpai
Arizona Public Service
Palo Verde Nuclear Generating Station, Arizona

ABSTRACT:
Recent nuclear crisis in Japan has renewed concerns related to the safety and reliability of Nuclear Power Generating Plants. This talk by a couple of veterans from Arizona's Palo Verde Nuclear Generating Station will discuss the various challenges that could occur in a typical Nuclear Power Generation Plants, triggered by operating conditions or natural disaster situations which could result in a safety or reliability concerns. This presentation will review the design and operational measures deployed to insure safe operation of Nuclear Generating Plants and Power Grid Reliability systems that protect a nuclear plant from blackouts.

BIOGRAPHY:
Mr. Harvey Leake is a Senior Consulting Engineer at the Palo Verde Nuclear Generating Station. He received his Bachelor degree in electrical engineering from Arizona State University and has nearly forty years experience in the design of power systems for generating stations and other types of facilities. He is a former chairman of Subcommittee 4 of the IEEE Nuclear Power Engineering Committee, member of the working group for IEEE 741, Electrical Protection for Nuclear Generating Stations, and member of the working group for IEEE 765, Preferred Power Supply for Nuclear Generating Stations. He is also a member of the Nuclear Energy Institute's Grid Reliability Task Force and the EPRI Transformer and Switchyard Users' Group.

Mr. Munnu Bajpai recently retired from Arizona Public Service as Senior Electrical Engineer. During a forty-five year career he has worked at Palo Verde Nuclear Generating Station in Substation and System Protection at APS and mining industry in AZ. He is a Senior Member of IEEE and a member of IEEE Power engineering Society and active in PSRC and vice chairman of many subcommittees. He received MS in engineering from ASU.

Date: Wednesday, Tuesday April 19th, 2011

Location: Group Conference Room, Freescale Semiconductor, Inc., 2100 E. Elliot Rd. Tempe, AZ. Enter the facility through the Main (South) lobby in building 94, by the flag poles; you will be escorted to the meeting venue.

For more information, please contact any of the following CPMT officers:

Vivek Gupta (480) 413-5849 Vasu Atluri (480) 227-8411
Surinder Tuli (480) 554-8275 Samir Pandey (480) 552-7502

TISP/EIC Report

1 February 2011

Mike Poggie
John F. Purchase

School Support Plan For 2010 / 2011 School Year:

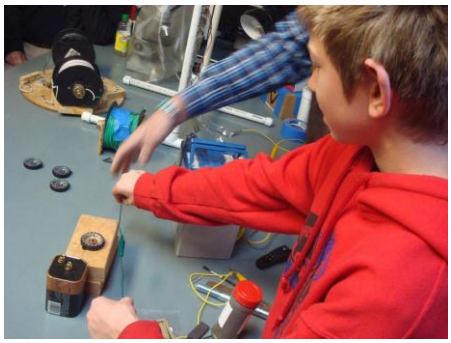
- In the current support plan for the 2010 / 2011 school year we now have:
  - 9 schools / 44 classes in 2010, September 1 – December 31
  - 11 schools / 69 classes in 2011, January 1 – May 31
  - A total of 2562 students
    - This student count excludes Kid Zone where we only loan the capital equipment
- We are basically fielding a team of 4 – 5 members to a school each and every week until the end of May
- We are already receiving bookings for the next 2011 / 2012 school year
  - October is already fully booked

We Offer Six Ready-To-Run Lesson Plans:

- "Sail Away" – Archimedes Principle, Newton's Laws
- "Working With Watermills" – Mechanical Advantage, Simple Machines
- "All About Electric Motors" – Magnetism, Electromagnetism, Electric Motors
- "Here Comes The Sun" – Electric Circuits, Sources & Loads In Series & Parallel, Solar Cells
- "Rockets!" – Newton's Laws
- "Popsicle Bridges" – Structures In Compression And Tension

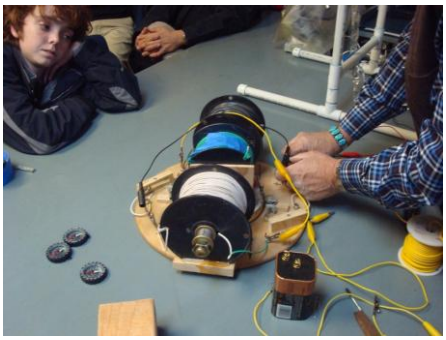
- Three of them were new this year:
  - All About Electric Motors
    - This was actually a rework of an existing lesson plan from the beginning of EIC
  - Rockets!
  - Popsicle Bridges

TEACHING ELECTROMAGNETIC THEORY & PRACTICE

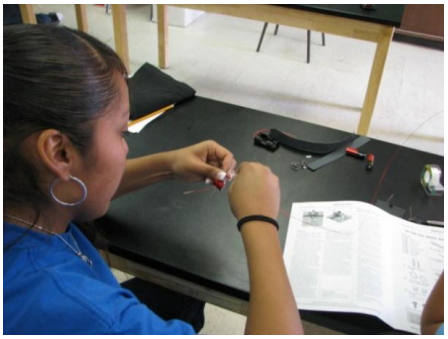


DEMONSTRATING ELECTROMAGNETICS

DEMONSTRATING ELECTROMAGNETICS



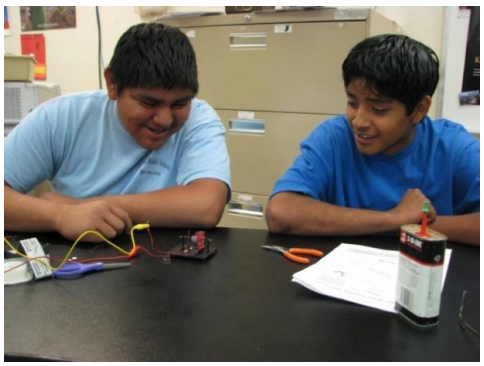
WINDING THE KIT MOTOR ARMATURE



2/1/2011 IEEE TISP/EIC 4

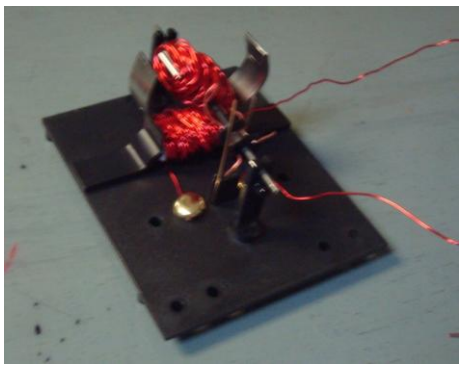
WORKING OUT WHAT TO DO

SUCCESS!



THE ENGINEERS HELP OUT

STUDENT'S KIT MOTOR AS BUILT



2/1/2011 IEEE TISP/EIC 5

TEACHING ROCKET THEORY

DEMO OF CP / CG OFFDSET FOR FLIGHT STABILITY

TEACHING THE SIMULATOR OPERATION

THE SCIENCE TEACHER HELPS WITH THE SIMULATOR

BUILDING

BUILDING

A COMPLETED ROCKET!

LAUNCH!

We Did A "Classic TISP" In January:

- The Principal of Rover Elementary in Tempe is converting his school to an Arts And Science Academy
- Consequence of pressure from parents unhappy with NCLB
- Started in 2009 and completes in 2011
- Is getting some support from a professor at ASU School of Engineering
- He asked Phoenix TISP to conduct a "classic TISP" session to train 14 of his grade 2 thru' 5 teachers in how to teach STEM
- TISP session was scheduled for Friday, January 7th and Saturday, January 8th
- Led by Mike Poggie with support from
  - John Purchase
  - Dave Leeper
  - Tom Innes
- Lecture followed by two hands-on lesson plans from TryEngineering
  - All About Electric Motors
  - Popsicle Bridges
- After the session the principal, Mark Martinez, told us it had been exactly what he wanted
- The teachers also all expressed their appreciation and enjoyment of the session
- Our equipment and material costs are being covered by IEEE National Office

MIKE P LECTURES ON IEEE & TISP

DAVE L LECTURES AND JOHN P DEMO'S MAGNETISM

JOHN F LECTURES ON TEACHING GRADES 2 – 5

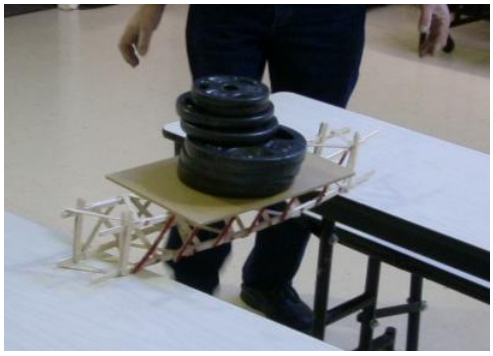
JOHN F LAUNCHES AN AIR ROCKET

BUILDING TRUSSES

BUILDING A TRUSS STRUCTURE

COMPLETE WITH SPARKLES!

AND IT CARRIES 50 LBS!



A FINISHED TRUSS BRIDGE, BUT……..…OOPS!

A MASSIVE TRUSS THAT CARRIED 75 LBS WITH HARDLY ANY SAG!

IEEE-USA Government Fellowships:

Linking Science, Technology & Engineering Professionals with Government

(http://ieeeusa.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://ieeeusa.org/policy/govfel/documents/cfappkit12_000.doc

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

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

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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) by February 28, 2011. Please indicate if you would be willing to serve on the organizing committee and which roles would be of interest to you (e.g., Chair, Vice Chair, Treasurer/Secretary, Publicity/Web).

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
From: keyana.tennant@ieee.org
Date: April 1, 2011 1:02:39 PM PDT
To: wie@IEEE.ORG
Subject: WIE In-Person Meeting Information

Hello WIEC,

I wanted to keep you informed on the progress of the in-person meeting.

Information regarding registration for the in-person meeting and hotel accommodations will be sent in the near future. Contracts will be reviewed and approved in the upcoming week. If you need specific information regarding the meeting, please feel free to contact me at any time.

Date: 21- 22 May 2011
Location: Phoenix, Arizona
Hotel: Embassy Suites Biltmore (WIE will have a special hotel room rate for attendees)
2630 East Camelback Road, Phoenix, Arizona 85016

If you require a visa letter, please send me an email with this request.

Warm Regards,

Keyana

Keyana N. Tennant, MPA
Program Manager, Women in Engineering
Associate Editor, Women in Engineering Magazine
IEEE Educational Activities Department
445 Hoes Lane
Piscataway, NJ 08854
Tel: 732-981-3423 Fax: 732-981-1686
E-mail: keyana.tennant@ieee.org

IEEE Computer Society

Phoenix Chapter of the IEEE Computer Society

March, 2011

News

 The chapter picnic was held on March 26th. Attendance was light, but the conversation was excellent and it was a productive event.

Future Events

We continue with our bi-monthly schedule for 2011:

- May 4 – Chapter meeting, DeVry University; speaker: Dr. Brad Morantz, Multiprocessing Matrix Math

- July 6 – Chapter meeting, DeVry University; speaker TBD

- September 7 – Chapter meeting, DeVry University; speaker TBD

- November 2 – 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: @IEEECSPHX
If you would like to suggest a topic and/or speaker for any of our 2011 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)

IEEE

INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

IEEE SOLID-STATE CIRCUITS SOCIETY

Solid State Circuits Society - Phoenix Chapter
And Waves and Devices Society – Phoenix Chapter

Meeting Free & Open to Non-IEEE Members
1:30pm to 2:30pm, Monday, April 18th, 2011 ***(Note date Change)***
Arizona State University- GWC 487 (map)

Analog-to-Digital Converters for Software-Definable Radios

Speaker: ***Dr. Doug Garrity.*** *(douggarrity@freescale.com) Freescale Data Converter Center of Excellence, Freescale Semiconductor, Inc.*

Abstract:

As process technologies continue to improve and more digital processing power and memory become available, the capabilities of software-definable radios (SDR) also improve while the cost is correspondingly reduced. One of the key challenges to the implementation of a portable, low-cost SDR is the design of the receiver lineup and the position of the analog-to-digital converter (ADC) therein. This presentation explores possible receiver architectures from the perspective of the ADC. Challenges to and limitations of possible ADC architectures are presented and two likely architectures (sigma-delta and pipelined ADCs) are considered including specific case studies for several designs. ADCs that might be used in other portions of a radio are also considered

Biography

Doug Garrity (S'85-M'86-SM'04) received the B.S. degree from Portland State University, Portland OR, in 1986, the M.S. degree from the University of Idaho, Moscow, ID in 1993, and the Ph.D. degree from Arizona State University, Tempe, AZ in 2007 all in electrical engineering. He worked in the Custom Design Engineering Group at American Microsystems, Inc., from 1986 to 1988 and from 1989 to 1992 designing and testing mixed-signal integrated circuits. He is currently a Fellow of the Technical Staff at Freescale Semiconductor, Inc. (formerly Motorola Semiconductor Products Sector), Tempe, AZ, where he is involved in the research and development of high-performance data converters for embedded applications. He has received 28 U.S. Patents with several more pending in the field of data converter and analog VLSI circuits. Dr. Garrity was named a Freescale Fellow in 2010 and received Freescale's Master Innovator Award in 2009. He was appointed a member of Motorola's Science Advisory Board Associates, was a recipient of Motorola's Distinguished Innovator Award, and was named a Motorola Dan Noble Fellow in 2003. Dr. Garrity also served as a member of the Technical Program Committee of the IEEE Custom Integrated Circuits Conference from 1994 through 2004. He also received the Semiconductor Research Corporation Mahboob Khan Mentor of the Year Award in 2001. Dr. Garrity has twice served as a guest editor for special issues of the IEEE Journal of Solid-State Circuits and has served as an Associate Editor from 2002 to 2005. He has also served as an Associate Editor for the IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing.

IEEE SWA Spring Meeting 30 April 2011

IEEE Region 6 Southwest Area:

The IEEE R6 SWA Spring meeting is scheduled to be held Saturday, 30 April in Phoenix, Arizona.

IEEE will reimburse for one day hotel, flight tickets, and any reasonable meal charges during travel to and from Phoenix, Arizona. IEEE will reimburse one section officer, one student branch officer, one student branch advisor/counselor, and student paper contest/micro-mouse competition participants. IEEE Region 6 Travel Policy is at:
http://ewh.ieee.org/reg/6/travel.html

A block of hotel rooms are reserved at:

The Phoenix Airport Marriott
1101 N. 44th Street
Phoenix, AZ 85008

Reservations with the hotel can be made until 21 April. Please call central reservations 1-800-228-9290 and ask for the IEEE Region 6 room rate of $109.

Please note that all the student papers are due to Dr. Bob Bond, Student Paper Contest Coordinator, by Friday, April 15th, 2011. Please refer to the IEEE Region 6 SWA Spring 2011 Student Paper Guidelines for additional details. Student paper guidelines are attached. Dr. Bob Bond can be reached by email at rhb@ee.nmt.edu and telephone at (575) 835-5411.

Any questions or clarifications related to Micromouse competition, please contact Dr. Emma Regentova. All participants for Student Paper Contest and Micromouse Competition are requested to send in the IEEE Region 6 Southwest Area Spring 2011 Paper Contest and Micromouse Competition Registration Form. Micromouse contest rules are attached.
Dr. Emma Regentova, Micromouse Competition Coordinator, can be reached by email at regent@egr.unlv.edu and by telephone at (702) 895-3187.

By the way, we need judges! Please send the name of someone in your section or someone you work with who would be willing to serve as a
judge! Please let me know if you have an interest in serving as a
judge for either competition.

Contact Keith Moore at Keith.Moore@US.ARMY.MIL or Mike Andrews who will be hosting the event at m.andrews@ieee.org for additional information or general questions.

RSVP to myself and indicate if you are planning to attend the meeting.

Chair, IEEE SWA

IEEE Region 6 SWA
April 30th , 2011

Micromouse Contest Rules

1. OBJECTIVE

1.1. In this contest the contestant or team of contestants design and build small self-contained robots (micro mice) to negotiate a maze in the shortest possible time.

2. CONTEST ELIGIBILITY

2.1. All contestants must be an undergraduate IEEE student member at a Region 6 school from within the Area of Region 6 in which contest they will compete at the time of entry in the MicroMouse contest. Any student who graduates anytime during the Fall-Spring academic year in which the contest is held is eligible to enter the contest. A student graduating after competing in the contest still remains eligible to compete in succeeding Area, Region, and higher contests as an undergraduate student. Up to two graduate students per team are also allowed as stated in **Rule A.4** below, providing they meet all other requirements.

2.2. All contestants must be an IEEE Student Members or must have submitted an application for membership (and have it approved by their Student Branch Counselor) prior to entry in the Student Branch and/or Chapter Contest.

2.3. The MicroMouse entry may be the effort of an individual or a team. In the case of a team it should be possible to demonstrate that each individual made a significant contribution and that they are all IEEE members.

2.4. A team may consist of up to five people. A team of four or five people may include no more than two graduate students. A team of two or three people may have no more than one graduate student. A team consisting of a single graduate student is not allowed.

2.5. All entrants to the Student Branch Area contests must declare their intention to enter the contest at least 2 weeks before the date of the contest, that is before **April 15th, 2011. Participants must send a registration notice containing a) Names (underline the lead-student name); (b) addresses of each group member; (c) IEEE member numbers; The registration notice must be submitted to the contact person(s) via email or fax (see below). Additionally, all entrants must register on-line for participation in SWA Spring meeting and indicate their participation in the contest**.

2.6. If the total number of declared mice, from all schools, is less than the number of eligible schools to compete in that Area, all shall be eligible to compete in the area contest. Two or more mice of near identical design from the same school are not allowed. If more mice than the number of eligible schools to compete are entered in the contest (i.e., four mice from the same school), a qualifying competition will be held just before the actual contest. A qualifying contest might involve, for example, having the mice traverse a specific numbers of cells and the time of the pass.

3. RULES FOR THE MICROMOUSE

3.1. A MicroMouse shall be self-contained (no remote controls). A MicroMouse shall not use an energy source employing a combustion process.

3.2. A MicroMouse shall not leave any part of its body behind while negotiating the maze.

3.3. A MicroMouse shall not jump over, fly over, climb, scratch, cut, burn, mark, damage, or destroy the walls of the maze.

3.4. A MicroMouse shall not be larger either in length or in width, than 25 centimeters. The dimensions of a MicroMouse that changes its geometry during a run shall not be greater than 25 cm x 25 cm. There are no restrictions on the height of a MicroMouse.

3.5. The total cost of the mouse (in materials, labor is assumed to be free) may not exceed $500.00. This is judged on actual cost and market value of any donated materials used in the mouse. An individual or a team must have the description of components and their market prices at the time of contest to present it at judges' request. *Since market values may vary from source to source, contestants must submit the copies of catalog pages along with the cover page of the catalog or quotes to confirm unusual prices*.

3.6. Since market values may vary from source to source, contestants are advised to provide catalogs or quotes to confirm unusual prices. The judge's decision shall be final in these matters.

3.7. Any violation of these rules will constitute immediate disqualification from the contest and ineligibility for the associated prizes.

4. RULES FOR THE MAZE

4.1. The maze is composed of multiples of an 18 cm x 18 cm unit square. The maze comprises 16 x 16 unit squares. The walls of the maze are 5 cm high and 1.2 cm thick (**assume 5% tolerance for mazes**). The outside wall encloses the entire maze.

4.2. The sides of the maze walls are white, the tops of the walls are red, and the floor is black. The maze is made of wood, finished with non-gloss paint.

4.2.1. WARNING: Do not assume the walls are consistently white, or that the tops of the walls are consistently red, or that the floor is consistently black. Fading may occur; parts from different mazes may be used. Do not assume the floor provides a given amount of friction. It is simply painted plywood and may be quite slick. The maze floor may be constructed using multiple sheets of plywood. Therefore there may be a seam between the two sheets on which any low-hanging parts of a mouse may snag.

4.3. The start of the maze is located at one of the four corners. The start square is bounded on three sides by walls. The start line is located between the first and second squares. That is, as the mouse exits the corner square, the time starts. The destination goal is the four cells at the center of the maze. At the center of this zone is a post, 20 cm high and each side 2.5 cm. (This post may be removed if requested.) The destination square has only one entrance.

4.4. Small square zones (posts), each 1.2 cm x 1.2 cm, at the four corners of each unit square are called lattice points. The maze is so constituted that there is at least one wall at each lattice point.

4.5. Multiple paths to the destination square are allowed and are to be expected. The destination square will be positioned so that a wall-hugging mouse will NOT be able to find it.

5. RULES FOR THE CONTEST

5.1. Each contesting MicroMouse is allocated a total of 10 minutes of access to the maze from the moment the contest administrator acknowledges the contestant(s) and grants access to the maze. Any time used to adjust a mouse between runs is included in the 10 minutes. Each run (from the start cell to the center zone) in which a mouse successfully reaches the destination square is given a run time. The minimum run time shall be the mouse's official time. First prize goes to the mouse with the shortest official time. Second prize to the next shortest, and so on. **NOTE**, again, that the 10-minute timer continues even between runs. Mice that do not enter the center square will be ranked by the maximum number of cells they consecutively transverse without being touched. All mice who enter the center square within their 10 minute allotment are ranked higher than those who do not enter the center square.

5.2. Each run shall be made from the starting square. The operator may abort a run at any time. If an operator touches the MicroMouse during a run, it is deemed aborted, and the mouse must be removed from the maze. If a mouse has already crossed the finish line, it may be removed at any time without affecting the run time of that run. If a mouse is placed back in the maze for another run, a one-time penalty of **30 seconds** will be added to the mouse's best time.

5.3. After the maze is disclosed, the operator shall not feed information on the maze into the MicroMouse however, switch positions may be changed. See **Rule D.1**.

5.4. The illumination, temperature, and humidity of the room shall be those of an ambient environment. (40 to 120 degrees F, 0% to 95% humidity, non-condensing).

5.4.1. **BEWARE**: Do not make any assumptions about the amount of sunlight, incandescent light, or fluorescent light that may be present at the contest site.

5.5. The run timer will start when front edge of the mouse crosses the start line and stops when the front edge of the mouse crosses the finish line. The start line is at the boundary between the starting unit square and the next unit square clockwise. The finish line is at the entrance to the destination square.

5.6. Every time the mouse leaves the start square, a new run begins. If the mouse has not entered the destination square, the previous run is aborted. For example, if a mouse re-enters the start square

(before entering the destination square) on a run, that run is aborted, and a new run will be deemed begun, with a new time that starts when the starting square is exited.

5.7. The mouse may, after reaching the destination square, continue to navigate the maze, for as long as their total maze time allows.

5.8. If a mouse continues to navigate the maze after reaching the destination square, the time taken will not count toward any run. Of course, the 10-minute timer continues to run. When the mouse next leaves the start square, a new run will start. Thus, a mouse may and should make several runs without being touched by the operator. It should make its own way back to the beginning to do so.

5.9. The judges reserve the right to ask the operator for an explanation of the MicroMouse. The judges also reserve the right to stop a run, declare disqualification, or give instructions as appropriate (e.g., if the structure of the maze is jeopardized by continuing operation of the mouse).

5.10. A contestant may not feed information on the maze to the MicroMouse. Therefore, changing ROMs or downloading programs is NOT allowed once the maze is revealed. **However, contestants are allowed to**:

5.11. Change switch settings (e.g. to select algorithms)

5.12. Replace batteries between runs

5.13. Adjust sensors

5.14. Change speed settings

5.15. Make repairs

5.16. However, a contestant may not alter a mouse in a manner that alters its weight (e.g. removal of a bulky sensor array or switching to lighter batteries to get better speed after mapping the maze is not allowed). The judges shall arbitrate.

5.17. There is only one official IEEE MicroMouse contest each year in each Area or Region. All mice, whether or not they have competed in previous contests, compete on an equal basis. All mice must be presented to the judges by the original design team, which must meet all other qualifications. First prize will go to that mouse which travels from the start square to the destination square in the least amount of time. Second and third prizes will be awarded to the second and third fastest respectively. As stated in **Rule 4.1**, mice that do not enter the center square will be ranked by the maximum number of cells they consecutively transverse without being touched.

5.18. A rotating trophy is awarded to the first place mouse. Verbal recognition and certificates will be given to the top three mice among those who are competing for the first time. If you and your mouse are first-time contestants, be sure to so stipulate when you register for the contest and notify the contest judge at the time of the contest.

5.19. If requested, a break will be provided for a mouse after any run if another mouse is waiting to compete. The 10-minute timer will stop. When the mouse is re-entered, the 10-minute timer will continue. The judges shall arbitrate on the granting of such breaks.

Contacts:

Dr. Emma Regentova, coordinator, Micro-Mouse Competition, Tel: (702) 895-3187; Email: emma.regentova@unlv.edu

IEEE Regional Student Paper Contest Guidelines

Purpose

The IEEE Student Prize Paper Contest offers the undergraduate IEEE Student member opportunities to exercise and improve both written and verbal communication skills. Throughout an engineer's career, he will be constantly called upon to communicate ideas to others. Researching, writing, and presenting a paper provides a Student with invaluable early experience in expressing ideas related to engineering. Since the paper contest primary function is to improve the engineering student's communicative skills, no Student should be discouraged from entering the contest due to a false requirement of technical sophistication.

A. Eligibility

1. The entrant must be an undergraduate student at a school in the Region at which there is an IEEE Student Branch at the time of entry and presentation at the Branch contest.
2. A Student must complete and submit an application for membership in IEEE prior to entry in the Branch Contest.
3. An entrant may collaborate writing a paper with additional students, all whom meet the above criteria.

B. Number of Entries

1. There shall be no limit of entries in the local Branch contest. If there is only one entry, the Counselor may declare the author submitting the paper the Branch winner.
2. Each Branch normally enters the first place winning paper in the next level contest.
3. No paper may be entered in the Area or Regional contest without the prior approval and certification of the Branch Counselor.

C. Prizes and Travel Expenses

1. The Institute Life Member Fund will provide the funds for the prize money.
2. Additional prize money may be made available at the option of the Chairman of each contest.
3. The schools represented by the winning Regional papers may receive appropriate recognition from their Region.
4. Co-authors shall share equally in the allocation of cash awards.
5. Regional Student Activities Committee budget shall support the Area and Regional contest expenses, including travel, unless other funds are available.

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.

www.rfic2011.org

2011 IEEE Radio Frequency Integrated Circuits Symposium

Baltimore Convention Center
Baltimore, MD, USA
Sunday, June 5th, 2011 – Tuesday, June 7th, 2011

Topics related to original work in RFIC design, system engineering, system simulation, design methodology, RFIC circuits, fabrication, testing and packaging to support RF applications in areas such as: Cellular System ICs, Wireless Data System ICs, Wideband System ICs, Silicon mm-Wave ICs, Small-Signal Circuits, Large-Signal Circuits, Frequency Generation Circuits, RFIC Device Technologies, RFIC Testing, RFIC Modeling and CAD.

Image Courtesy of Ed Niehenke

Plenary Speakers

Dr. Samuel Sheng, Telegent Systems
"RF Coexistence – Challenges and Opportunities."

Mr. Ron Ruebusch, Avago Technologies
"3G to 4G Transition – Challenges and Opportunities."

Technical papers will be presented during oral sessions throughout Monday and Tuesday. There will be a total of 130 papers presented in 23 technical focused sessions. The technical program will conclude with the Interactive Forum session on Tuesday afternoon, which will feature 31 poster papers and the chance to speak directly with authors regarding their work.

Workshops (Sunday):
Introduction to GaN MMIC Design
Advancements and Challenges toward Radio-in-Package and Radio-on-Chip
Imaging at mm-Wave and Beyond
RF Bio-Medical Electronics and Sensors
Re-configurability Requirements for Multi-Standard Low-Power Operation
Advancements in Linear Power Amplifiers for Cellular Infrastructure
EMI Compliant Product Design Practices: Interference Analysis, Floor Planning, Grounding Strategies, Chip-Package-Board Co-Design
New Architectures for Digitized Receivers
Design for Manufacturability and Self-Testability of RFICs
Systems & Circuits for Sensing, Co-Existence, and Interference Mitigation in SDR and Cognitive Radios
Efficiency Enhancement Techniques of Power Amplifiers and Transmitters for Mobile Applications

Panels (Monday & Tuesday):
Software Defined Radios - Facts and Fantasies
What is the limit of multi-radio integration ... or rather, is it 'disintegration'?

Short Courses (sponsored by IMS):
Techniques and Realizations of Microwave and RF Filters
Nonlinear Dynamics and Stability Analysis/Design of Microwave Circuits

General Chairman:
David Ngo
RFMD, Inc.
Chandler, AZ, USA
Phone: 480-763-2108
E-mail: dngo@rfmd.com

Technical Program Chairman:
Albert Jerng
Ralink Technology
Jhubei, Taiwan
Phone: +886-3-560-9868 x1713
E-mail: ajerng@gmail.com

Technical Program Co-Chairman:
Chris Rudell
University of Washington
Seattle, WA, USA
Phone: 206-685-1600
E-mail: jcrudell@u.washington.edu

Become an IEEE Senior Member

If you have 10 years of experience in electrical engineering (including any time in graduate school) you may qualify for elevation to IEEE Senior Member!

Apply on-line at the following link:

http://www.ieee.org/membership_services/membership/senior/senior_application.html

Need help with reference letters or a nomination? Contact any Section officer (see page 1 for contact information).

IEEE Phoenix Section Nomination of Officers

The Section Executive Committee is seeking nominations for officers for next year. Steve Rockwell has offered to lead this effort. If interested please contact Steve Rockwell (steve.rockwell@ieee.org) for more information.

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 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

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Phoenix Section LinkedIn Group

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