The Valley Megaphone

Newsletter of the

Institute of Electrical and Electronics Engineers, Inc. Phoenix Section

May 2009,
Volume XXIII, Number 5

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This Issue of the Valley Megaphone features:

Contacts:

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

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

U – News

(for Student Members)

Graduation! For those graduates entering the working world, this will be the last issue you will read as Student Members and you will have the opportunity to participate as a Professional Member of IEEE in the various chapter organizations and technical events.

Congratulations! The IEEE Phoenix Executive Committee extends best wishes for your career as graduating students. For graduating students returning for advanced degrees, your continued participation is sincerely requested as we look to build student membership.

Graduate Contacts! There are on-line web sites (such as Linked-In) which will allow you to post your profile and track contacts from your graduating class, the school alumni, professors and industry contacts. Manage your contacts and grow your industry network.

Regards,
Nicholas Leonardi
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Student Branches

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U-Newsbytes

- Next IEEE Phoenix Section Executive Committee Meeting is being held on May 5th. Student Reports are due May 4th and submitted to Nick Leonardi at nleonardi@ieee.org
- Student Chapter Officers are in the process of filling officer positions being vacated by graduating students. Student Chapter activity will resume for 2009 - 2010 school year.
- Student Paper from ASU student Lakshmi Pooja Ghanta titled "Phenotypic Variation" was selected for the Phoenix Section and submitted into IEEE Regional Competition.
- ASU IEEE Computer Society collaborates with Sun Microsystem's Open Source University Meetup (OSUM) Program. Sign-up Today! (Page 12).

IEEE – EDS Masters/Ph.D Student Fellowship

The IEEE Electron Devices Society has established the Masters and Ph.D. Student Fellowship Programs to promote, recognize, and support advanced degree study and research within the Electron Device Society's fields of interest. The application deadline is **May 15, 2009**. Please contact Chuck Weitzel, the Publicity Chair of the IEEE Phoenix – Waves Devices Chapter, at E-mail: c.weitzel@ieee.org for more details.

IEEE Launches Interactive Web Site to Highlight Members' Humanitarian Projects

IEEE has announced the new Humanitarian Technology Network (HTN) – a platform that enables IEEE members to connect and collaborate with others doing similar humanitarian work, while gaining visibility and recognition for their efforts. In addition to sharing details of their project(s), IEEE members may also post their needs for advice, funding or assistance from others. The ability to post articles in the HTN is one of the benefits of IEEE membership. Anyone can browse or view the HTN content, including humanitarians, Non-Governmental Organizations (NGOs), and others who may wish to partner with or fund member humanitarian efforts.

The HTN is built on the same technology as the IEEE Global History Network launched in 2008. The platform accommodates multi-media descriptions – including text, photographs, diagrams, audio, video, as well as PowerPoint slide presentations. The network is now open for IEEE member contributions. To add content to the HTN, visit www.ieeehtn.org.

Job Opportunity – Electrical Instructor

ELA INSTITUTE FOR FACILITY MANAGEMENT EDUCATION has an upcoming evening position for an **Electrical Instructor** for our Facility Maintenance Technician Program, Thursday evenings, beginning August 13, 2009.

The ideal candidate will have recent experience in a managerial position in a large facility, and will have a thorough knowledge of electrical fundamentals, installation, operation, maintenance, troubleshooting techniques and safety procedures. 15 years minimum electrical related experience is required, and Community College teaching approval or any teaching experience is a big plus.

All resumes will be considered.

For more information, or to fax or e-mail your resume, contact
Yolanda L. Price, Director of Education & Programs
Fax:602-277-9881 yprice@electricleagueofarizona.org

Phoenix Chapter of the IEEE Computer Society

May '09 Meeting Announcement

Our May meeting is focused on Career Opportunities! Please come for networking and a technical presentation on emerging trends in Security and Technology Careers!

Wednesday, May 6, 2009

Topic: **Emerging Trends for Security and Technology Careers in the Coming Decade**

Speaker: **Debbie Christofferson, CISSP, CISM**

Location: **DeVry University, 2149 West Dunlap Ave, Phoenix, AZ 85021**
(1 mile east of I-17 on Dunlap, SE corner of 22nd Ave and Dunlap).

Social Hour sponsored by:
Legato Technology
– Embedded and Networking Software Solutions

Networking will be in the Courtyard (6-7PM with light meal), presentation at 7PM. *Free, everyone is welcome. Please tell others about this meeting.*

Future Technical Meetings

On summer hiatus through August 2009!!!

- **October, 2009 Advances in Digital Image Processing, Jorge Caviedes, Intel Corp**
- **November, 2009 – TBA**
- **December, 2009 - TBA**

Would you like to be a speaker at a future meeting? We are always looking for interesting speakers to cover computer related topics. **Contact joy.shetler@computer.org OR Jon.Candelaria@motorola.com for more information on becoming a speaker today.**

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
WAVES AND DEVICES CHAPTER
http://ewh.ieee.org/r6/phoenix/wad/

Meeting Free & Open to Non-IEEE Members
May 18th, 2009, MTTS Meeting
Freescale Semiconductor, Tempe, AZ
Group Conference Room – 2:00 PM

SDR Based Power Amplifiers /Transmitters for Advanced Wireless and Satellite Communications

Presented by
Fadhel M. Ghannouchi
Department of Electrical and Computer Engineering,
Schulich School of Engineering, University of Calgary, Canada

Abstract
The next wave in the information revolution will consist of bringing intelligence to the information and communication technology (ICT) sector, allowing seamless and intelligent networking and communication between different users using different services and operators. This will lead to the convergence of communication technologies, aiming at the development and deployment of cooperative and ubiquitous networks that involve existing and future wireless and satellite communications systems. A critical element in enabling the convergence of different communication systems is the development of software defined radio (SDR) systems that can be used across different frequency bands and for multi-standard applications. This SDR has to be developed to support different frequency carriers and modulations schemes concurrently, in addition to being power- and spectrum-efficient, in order to be able handle high data rates, while being less energy-hungry and more environmentally friendly.

The design of power amplifiers as critical components in any SRD based communication terminal has to be considered closely together with the system architecture, in order to ensure optimal system level performances in terms of linearity and power efficiency. This implies the use of adequate transmitter architectures that convert the analog baseband information to architecture dependent amplifier driving signals, such as sigma-delta, EE&R, Polar and LINC architectures. This talk lays out the principles behind SDR systems and examines the design of software-enabled linear and highly efficient RF/DSP co-designed power amplifiers/transmitters for multi-standard and multi-band applications. Recent advances and practical realizations will also be presented and discussed.

Biography

Fadhel Ghannouchi is currently a professor, iCORE/Canada Research Chair and Director of the iRadio Laboratory in the Department of Electrical and Computer Engineering at the University of Calgary, Alberta. He was with Ecole Polytechnique de Montreal until 2005, where he taught microwave theory and techniques and RF communications systems since 1984. He has held several invited positions at several academic and research institutions in Europe, North America and Japan. He has provided consulting services to a number of microwave and wireless communications companies. His research interests are in the areas of RF and wireless communications, nonlinear modeling of microwave devices and communications systems, design of power- and spectrum-efficient microwave amplification systems and design of SDR systems for wireless and satellite communications applications. His research has led to over 400 refereed publications, 7 US patents and 3 patents applications Dr Ghannouchi is IEEE Fellow, IET Fellow and Fellow of Engineering Institute of Canada.

Date: May 18th, 2009
Location: Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ Group Conf. Room, Bldg 94.
Time: 2:00-3:00 PM *Presentation*
Pizza will be served following the Seminar

For more information, please call:
Steve Rockwell (Chapter Chair) at (480) 241-9891 steve.rockwell@ieee.org
Chuck Weitzel (Chapter Publicity) at (480) 292-0531 c.weitzel@ieee.org

INSTTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
WAVES AND DEVICES CHAPTER
http://ewh.ieee.org/r6/phoenix/wad/

Meeting Free & Open to Non-IEEE Members
May 28th, 2009 – MTTS Meeting
Freescale Semiconductor, Tempe, AZ
Group Conference Room – 4:00 PM

Short-Range Wireless Networking Standards

Presented by

Dr. Shahin Farahani

Author of "ZigBee Wireless Networks and Transceivers" Book

Abstract

The area of short range, low data rate wireless networking has become crowded with several standards. Some of these standards are competing for the same market segment, while other standards can be complementary. The goal of this presentation is to describe the fundamentals and applications of each standard and identify the advantages and disadvantages of each standard for various applications.

Biography

Dr. Shahin Farahani has been a system engineer with Freescale semiconductor since 2003, where he and his colleagues are engaged in designing System-on-Chip transceivers for short-range wireless networking. He received his PhD from Arizona State University and has been selected as the Young Engineer of the Year by IEEE Phoenix section in 2008. Dr. Farahani's book, entitled "ZigBee Wireless Networks and Transceivers" is a comprehensive resource for wireless sensor networking using ZigBee/IEEE 802.15.4.

Date: **May 28th, 2009**
Location: Freescale Semiconductor, 2100 E. Elliot Rd., Tempe, AZ
Group Conference Room, Bldg 94.
Time: **4:00-5:00 PM *Presentation***

Pizza will be served following the Seminar

For more information, please call:
Steve Rockwell (Chapter Chair) at (480) 241-9891 steve.rockwell@ieee.org
Chuck Weitzel (Chapter Publicity) at (480) 292-0531 c.weitzel@ieee.org

Power & Energy Society Announcements

May 2009 Technical Meeting

Date: **May 21, 2009**

Time: 11:30 am - 12:00 noon: Registration
12:00 noon: Lunch
12:30 pm: Program

Speaker: **Nick Labadie** from **Engineers without Borders**, Phoenix Professional Chapter

Topic: Engineers without Borders (EWB) is a non-profit humanitarian organization established to partner with developing communities worldwide in order to improve their quality of life. This partnership involves the implementation of sustainable engineering projects, while involving and training internationally responsible engineers and engineering students. EWB-USA promotes the development of globally aware and internationally responsible engineers, students, and professionals.
See PES website for more information as it becomes available http://ewh.ieee.org/soc/pes/phoenix/.

Location: **APS Deer Valley Building N-1, Conference Room E**
2124 W. Cheryl Dr. Phoenix, AZ

Abstract: The presentation will cover the who, what, where, and why of EWB as well as an overview of the projects currently active among the five Arizona chapters. Nick will cover the ways to get involved and what that involvement looks like for volunteers of this organization that has been recently featured in Southwest Contractor magazine, Arizona Capitol Times, and KPHO CBS 5 News.

Bio: Nick Labadie is an urban planner with Rose Law Group where he represents clients on projects including zoning variances, master planned communities from ten to ten thousand acres, LEED consulting, and solar projects of all sizes both residential and commercial. Nick has been involved with EWB since 2004, is a founding member and president of the Phoenix Professional chapter as well as president of the EWB USA Mountain Region.

June, July and August 2009 Hiatus

PES does not hold monthly technical meetings during the summer so our next meeting will be on September 17, 2009. Watch the website http://ewh.ieee.org/soc/pes/phoenix/ for more details.

52nd Annual PES Golf Tournament

Date: September 26, 2009
Location: Antelope Hills Golf Club, Prescott, AZ

Reserve the date now for the wildly exciting PES golf tournament. More information to follow.

IEEE Phoenix Section – Annual Banquet 2009, February 7, 2009
A few fine moments in pictures…

Keynote Speaker Barbara Lockwood, facilitated by Past Chair Keith Holbert

Some of the Ex-Com members among the attendees

IEEE Phoenix Section Chair, Debendra Mallik, addressing the audience

Student Award Winners with Student Activities Chair, Nick Leonardi

Awards Chair, Vasu Atluri, in conversation with Web-master, Monica Braunisch and Vice-Chair, Henning Braunisch

A section of the audience

Photography by: Steve Rockwell
For more pictures, please visit
http://ewh.ieee.org/r6/phoenix/AnnualBanquet.htm

Display of the Future City Competition 2009 Project – Titanic City that won the IEEE Phoenix Award

IEEE Strategies to Help School Science Teachers

The national office of the IEEE has had an active program for a couple of years now to train science teachers in improved ways to teach science and engineering to school children. Called **TISP – Teacher In-Service Program** – the program is a response by the institute to the widely acknowledged appallingly low quality of science and mathematics knowledge among graduating school children, and the rapidly decreasing number of students who opt for a degree and a career in engineering rather than in business management, finance or law. The institute recognizes that a large part of the problem is the lack of knowledge and experience of engineering matters among the science teachers, this leading to a lack of exposure of children at a young age to real science or the encouragement of any child that might have an interest. In fact, studies show if children have not been exposed to science before high school it is really too late for them to get into it. Along with that, by 5th grade students need to know that going to college is a possibility for them.

Hence, a major part of the national IEEE program is the creation of a growing set of teaching modules / lessons plans, each module being structured around a particular engineering problem such as electric motors, structure loads, etc. Each module emphasizes the teaching of the relevant engineering, science and mathematics principles through a practical project performed by the students. These modules are freely available to any teacher on the institute website: www.tryengineering.org/lesson.php.

The TISP program is an effort sponsored and promoted by the national office but run at the local chapter level. The Phoenix Section lead on TISP is Mike Poggie. To further help the process, the national office has been running a series of workshops to train IEEE member volunteers in achieving two goals: to train teachers in better ways to teach engineering and science principles, and to provide in classroom assistance to the science and mathematics teachers. A small group from the Phoenix Section participated in the last session in November held in San Francisco; it was a lot of fun and very inspiring! But it is clear that to manage and implement TISP over the whole Phoenix Section, we have to divide up the tasks into manageable subsets, each subset under a different lead and all the subsets coordinated by Mike Poggie. A subset could be a distinct grouping such as retirees, or a town remote from Phoenix like Flagstaff, or even quite possibly a particular school.

As a first subset we are seeking to enlist the help of the talented retirees in the IEEE. Retirees represent a tremendous pool of engineering talent and knowledge associated with its application in the real world of industry, academia, government, etc. They are very capable of being able to show school children in science classes how what they are being taught relates to the real world and how science and math studies can lead to a fruitful and enjoyable career in engineering. Plus they have more time they can devote to this cause than do our colleagues in full-time employment and with young families. This subset is being organized by John Purchase. So any retiree interested in joining this effort should please email John Purchase at: jpurchase@cox.net. Once he has responses he will organize a meeting in the new year to explain, discuss and plan this outreach effort to help secure a future for our children as engineers and for our nation as a technical leader in the world.

Plus any non-retiree interested in helping the Chapter's TISP effort should get in touch with Mike Poggie at: Mike.Poggie@ieee.org. And the national office continues to run regular TISP workshops (and all travel expenses are reimbursed!); they are well worth attending for anyone interested in working with school children and teachers.

IEEE Mentoring Connection

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

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

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

Who can be an IEEE Mentor?

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

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

Who can be an IEEE Mentee?

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

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

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

Russ Kinner
Conferences Chair, Phoenix Section

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ECTC 2009

The 59th Electronic Components and Technology Conference

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38 technical sessions, including 2 poster sessions

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For more information, visit:
www.ectc.net

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IEEE Computer Society at ASU

Open Source University Meetup

IEEE Computer Society at Arizona State University has a history of dedication to collaboration and innovation, and is a firm believer in the power of open source software. We are also passionate about helping our students network and succeed. In this spirit, we are proud to announce collaboration with Sun Microsystems and their Open Source University Meetup (OSUM) program!

Sun Microsystems has rapidly emerged as a leader in the open source community, making a large variety of their platforms open including OpenOffice, OpenSolaris, OpenJDK, and even OpenSPARC. You know a company is serious about open source when it makes its hardware open! In their passion for open source, they have created a community called the Open Source University Meetup which exists as a social networking tool for developers to meet others who are passionate about open source and learn more about Sun technologies. Members of the OSUM community include students from all around the world, Sun staff, and any developer who has a passion for expanding his or her own knowledgebase.

Beyond the obvious networking opportunities, members of OSUM also get free, well-written and authoritative training on Sun technologies through the Sun Academic Initiative, and *extremely* reduced-cost sun certification exams! This is an amazing deal for those seeking to enhance their skill-set or prove that they have mastered a particular tool, and the best part is it's free and easy!

So what are you waiting for, an invitation? Well, here it is: go to http://osum.sun.com to sign up. Need more information? Please contact Nicholas Vaidyanathan at Nicholas.Vaidyanathan@asu.edu.

Phoenix Section Executive Committee Meeting

– First Tuesday of the month.

May '09 Meeting:

No Meetings in July and August

Date: May 5, 2009, Tuesday

Time: 6:00 pm to 8:00 pm

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

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

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

Contact: Debendra Mallik, Phoenix Section Chairman, dmallik@ieee.org

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IEEE Phoenix - Calendar of Events for May 2009:

You may access the IEEE Phoenix Section Calendar of Events at http://www.mynetcalendar.com/calendar.php?month=5&year=2009&calendarid=2400

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