The Valley Megaphone

Newsletter of the
Institute of Electrical and Electronics Engineers, Inc.
Phoenix Section
May 2007, Volume XXI, Number 5

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This Issue of The Valley Megaphone Features:

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Contents:

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

Please send announcements for Valley Megaphone to Eric Palmer: ecpalmer@ieee.org.

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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 Eric Palmer 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

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Embry-Riddle, Prescott
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Phoenix Section Executive Committee Meeting – First Tuesday of the month.

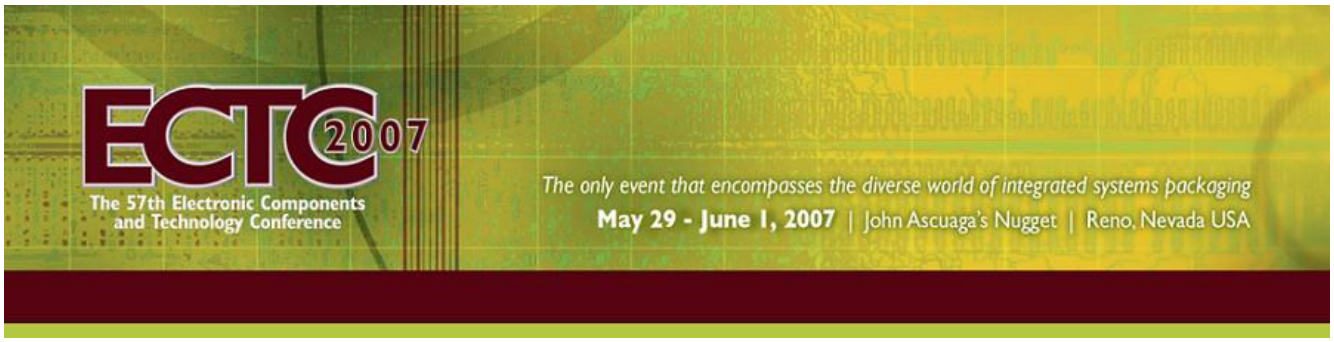
Time: 6:00 pm to 8:30 pm

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

Directions: From 143, exit University Ave, go west, turn right on 47th street.

More Info: Meetings held first Tuesday of month. No meetings in July and August. All interested IEEE members are welcome to attend.

Contact: Rao Thallam, Phoenix Section Chairman, ph: (602) 236-5481 or e-mail: thallam@ieee.org



DON'T WAIT!

Register online today for ECTC 2007 at www.ectc.net

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John Ascuaga's Nugget
Reno, Nevada USA

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IEEE Components, Packaging and Manufacturing Technology Society
Phoenix Chapter
Wednesday, May 16th, 2007 Meeting

The Flexible Display Center: Enabling the Next Revolution in Information Display Technology

Dr. Gregory B. Raupp
Director
Flexible Display Center at Arizona State University
ASU Research Park
Tempe, Arizona

Abstract

The Flexible Display Center (FDC) at Arizona State University is a unique partnership vehicle through which academia, industry, and government collaborate on rapid technology development, innovation and integration to create a new generation of information displays that will be flexible, lightweight, low power, and rugged. These revolutionary displays will usher in a new era of powerful real-time information sharing through everything from portable human borne or human worn devices, to displays for vehicles, and for fixed or mobile command & control or conferencing centers.

In this talk paper we describe the key issues embedded in direct fabrication of amorphous silicon (a-Si:H) transistor arrays on flexible substrates We have developed a low temperature channel-passivated a-Si:H TFT process on a professionally-staffed 6" wafer-scale Pilot Line. Heat-stabilized PEN (HS-PEN) is our preferred low temperature transparent polymer substrate, and thin stainless steel (SS) is our opaque inorganic platform. A maximum 180 °C process temperature was chosen to be compatible with the upper temperature limits of the plastic, as well as too minimize CTE-induced stress. Plasma-enhanced chemical vapor deposition (PECVD) 180 °C process windows were identified for the gate dielectric, a-Si:H channel, and n^+ a-Si:H contact layer, respectively. All other processes were run at lower temperatures, and no post-processing annealing was performed. As of April 2007, our baseline process produces TFT arrays with statistically averaged μ_{sat} of 0.8 cm^2/V-s, ON/OFF Ratio > 10^8, and subthreshold slope of less than 0.6. To enable flexible substrates to be processed in a Pilot Line manufacturing environment, we adopted a temporary bonding / de-bonding approach, which required development of new temporary adhesive materials, adapted manufacturing toolsets, and development of new processes. For HS-PEN the principal issue was dimensional stability, For stainless steel, the principal issues were surface roughness and CTE management. We will describe our solution paths and show images of our 3.8-in. QVGA electrophoretic ink displays fabricated on both HS-PEN and low CTE SS.

Biography

Dr. Gregory B. Raupp, (B.S. ChE with Distinction Purdue University, 1976; M.S. Ch.E. Purdue University, 1978; Ph.D. University of Wisconsin, Madison, 1984) is Professor of Chemical Engineering at Arizona State University and Director of the FDC. Prior to assuming the Director's position at Center launch in 2004, he was ASU's Associate Vice President for Research, and from 1999-2002 he was Associate Dean for Research in the Fulton School of Engineering.

Date: Wednesday, May 16th, 2007

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

Time: 5:30-6:00 Social/Refreshments, 6:00-7:00 Presentation, 7:00 Dinner
(Pizza and Soda are being provided by the IEEE CPMT Phoenix Chapter)

IEEE members and non-members all are welcome to attend. Those who plan to attend should be at the facility entrance no later than 6:00 pm, as there will be no escorts available after that.

For more information please call any of the following officers:

Debendra Mallik (480) 554-5328	Vivek Gupta (480) 413-5849	Victor Prokofiev (480) 552-0228
Vasu Atluri (480) 554-0360	Mali Mahalingam (480) 413-5368	Qing Zhou (480) 552-9177
Samir Pandey (480) 552-7502	Rao Bonda (480) 413-6121	Jim Drye (480) 413-3604

IEEE Computer Society - Phoenix Chapter

www.ewh.ieee.org/r6/phoenix/compsociety

May Meeting

Speaker: Mark Goldstein
Date: 6:00 P.M., Wednesday, May 2, 2007
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). Networking will be in the Courtyard (6-7PM with light meal), presentation at 7PM.
Free, everyone is welcome. Please tell others about this meeting.

Advances in Wireless Technology, Applications, and Implications

About the Speaker

Mark Goldstein is President of International Research Center (IRC), providing consulting, custom research, and strategic support for business, legal and public policy clients across a variety of disciplines and arenas since 1992.

Mark Goldstein is also a technophile and technology visionary, activist, advisor, and entrepreneur with extensive experience and connections throughout numerous technology sectors. He is involved with a number of policy, economic development, professional and trade groups, as well as being a frequent speaker and trainer. He frequently speaks to business and public groups and consults with government and business enterprises on the fast evolving transition to an information economy and how best to understand and take advantage of this quickly changing environment. In addition, he is in contact with individuals and organizations involved in the telecommunications and other high-tech industry, attends related conferences, and works to advance technology deployment, applications innovation, and policy advancement.

For more information about this meeting, contact c.vasquez-carrera@computer.org

IEEE GOLD Online Seminar

IEEE GOLD is doing it again in 2007!
Online seminar: "Career Decisions: Academia Vs Industry"

Thursday, 24 May 2007 at 21:00 UTC. (5:00 pm New York or 17:00).
Register for this seminar date. **Registration closes Friday, 18 May 2007**

Career Decisions -

- Do you wonder whether you made the right decision by going into industry? What are the different approaches to make this career decision?
- What are the advantages and disadvantages of working in industry? How is it different from working in academia?

Join us for this informative IEEE GOLD Online Seminar to learn how Dr. Grace Wong overcame the challenges she faced in her career, how she dealt with the issue of balancing her professional and personal life, and how she learned about the differences between career paths in academia and industry.

Questions? Please send to gold@ieee.org

Our Speaker, Dr. Grace Wong's Biography and Photo:

Dr. Grace Wong, PhD, CSO, ActoKine Therapeutics, Boston, USA

Dr. Grace Wong has worked for Genentech, Millennium, AstraZeneca and Serono on new drug discovery in a variety of therapeutic areas. Dr. Wong earned a PhD at The Walter and Eliza Hall Institute of Medical Research in Australia and did a postdoc with Dr. David Goeddel at Genentech and advanced basic research discoveries to product development. In 1996, Dr. Wong became the Head of Apoptosis Research at Millennium Pharmaceuticals. Dr. Wong worked at AstraZeneca as Section Head of Molecular Genetics and at Serono as Head of Functional Genomics. She has been awarded 13 scholarships from Hong Kong, Australian and American organizations and received 5 Recognition Awards from Genentech.

She was invited to present at 143 international conferences including the Nobel Symposium (Sweden, 1994). She has published 92 papers and filed 28 patents. Some of her publications (3 Nature, 1 Science, 3 Cell, 5 PNAS, and 7 J. Immunol) received 300-1000 citations.

In 2003, Dr. Wong founded Actokine Therapeutics (www.actokine.com) for new drug advancements for radioprotection and protection against a broad spectrum of virus infections. Grace also founded Student Vision/Nobel Pauling for helping students of all ages in biotech science through Nobel Pauling Biotech Symposia and Linus Pauling Biotech bible (www.studentvision.org).

IEEE ANNOUNCEMENTS

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

WAVES AND DEVICES
PHOENIX CHAPTER

May 29, 2007 MTTS Meeting
www.eas.asu.edu/~wadweb

Design of RF-CMOS Integrated Circuits for Wireless Communications

Professor Georg Boeck

Berlin University of Technology, Microwave Engineering Lab
boeck@tu-berlin.de

Abstract

The continuous progress of silicon technology has enabled the emergence of digital mobile broadband communication systems for voice, data, multimedia and position with good quality of service. Data-rate and mobility trade-offs, different standards like 2G, 3G, Bluetooth, WLAN, GPS and digital multimedia broadcasting are leading to multimode requirements. Issues concerning coexistence and inter-working of these different technologies have to be solved. Single chip integration with digital part, high integration density and excellent RF-performance, low power consumption and low cost under mass production aspects are further requirements. First system-on-chip (SoC) demonstrations show that today CMOS technologies seem to be able to fulfil all these requirements.

This lecture will review RF-CMOS technologies, RF-architectures and re-configurability principles as well as circuit and system design aspects for mobile multi-mode communication applications. It will consider special requirements on wafer processes like leakage and analogue and RF capabilities and will look to the world of system-level design. In this context, power-levels, form-factors and cost are key requirements for system-in-package and system-on-chip solutions. Of course, new challenges for the future will be considered and explored, too.

Biography

Prof. Boeck received the doctoral degree from Berlin University of Technology, Berlin, Germany, in 1984. In the same year he joined Siemens Research Labs in Munich, Germany, where his research areas were on fiber optics and GaAs electronics. From 1988 to 1991, he was a Full Professor for electronic devices and circuits at the University of Applied Sciences Regensburg, Regensburg, Germany. Since 1991, he has been the head of the Microwave Engineering Lab at Berlin University of Technology. His main areas of research are characterization, modeling and design of microwave semiconductor devices, MICs, and MMICs up to the 100 GHz regime. His special interests during the last years have been in the fields of power amplifiers and silicon integrated RF-circuits including the millimeter-wave range. Prof. Boeck has authored or co-authored more than 150 technical papers and one book and holds several patents. He serves at several Technical Program Committees and is a member of the editorial board of the Journal of RF-Engineering and Telecommunications. He is a Guest Professor of the Southeast University Nanjing, Nanjing, China. Prof. Boeck is a Senior Member of the IEEE and an international IEEE Distinguished Microwave Lecturer 2006-2008 in the field of "Design of RF CMOS Integrated Circuits".

Date: Tuesday May 29, 2007

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

Time: 3:30 - 4:30pm Presentation
For more information, please call Chuck Weitzel (Chapter Chair) at (480) 413-5906.

IEEE ANNOUNCEMENTS

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

WAVES AND DEVICES
PHOENIX CHAPTER

May 3, 2007 MTTS Meeting
www.eas.asu.edu/~wadweb

Electromagnetic Design for Wireless Applications and Multidisciplinary Optimization

Dr. Nicholas E. Buris
Motorola Labs, 1301 E. Algonquin Rd., Schaumburg, IL 60196

Abstract

This presentation starts with several specific electromagnetic design examples for wireless applications. These examples include antennas for cellular handsets, RFIDs as well as electromagnetic interference solution concepts. Various characteristics of advanced design methods are then examined. The case is made that multidisciplinary design methods need to be developed and employed for efficient solution of complex problems. At present, multidisciplinary issues encountered at the design of feature rich products are solved by intense communications between the design groups of interacting disciplines. The design of today's challenging products demands the same and higher degree of communications between the tools used by interacting disciplines. An electromagnetic and structural design example is used to elucidate the concepts discussed. Additionally, an outline of a framework capable of addressing concurrent optimization of multiple disciplines and of complex products is presented. The seminar ends with a list of proposed problems that need to be solved so that maximum efficiency can be achieved in solving the complex problems of the future.

Biography

Nick Buris received the diploma of Electrical Engineering in 1982 from the National Technical University of Athens, Greece and the Ph.D. in Electrical Engineering from the North Carolina State University, Raleigh, NC in 1986. In 1986 he was a visiting professor at NCSU working on space reflector antennas for NASA. In 1987 he joined the faculty of the department of Electrical and Computer Engineering at the University of Massachusetts at Amherst. His research work there spanned the areas of microwave magnetics, phased arrays printed on ferrite substrates and broadband antennas. In the summer of 1990 he was a faculty fellow at the NASA Langley Research Center working on calibration techniques for dielectric measurements and an ionization (plasma) sensor for an experimental reentry spacecraft.

In 1992 he joined the Applied Technology organization of Motorola's Paging Product Group and in 1995 he moved to Corporate Research to start an advanced modeling effort. While at Motorola he has worked on several projects from product design to measurement systems and the development of proprietary software tools for electromagnetic design. He currently manages the Microwave Technologies Research Lab within Motorola Labs in Schaumburg, IL. Recent activities of the group include high frequency communications systems design, modeling and measurements of complex electromagnetic problems, RF Propagation, Smart Antennas/MIMO, RFID systems as well as TIA standards work on RF propagation and RF exposure.

Nick is a senior member of the IEEE, and serves on a MTT Technical Program Committee. He recently served as chair of a TIA committee on RF exposure and is currently a member of its Research Division Committee.

Date: Thursday May 3, 2007
Location: Bernoulli Conference Rm, Bldg 99, Freescale Semiconductor, 2100 E. Elliot Rd., Tempe
Drive North on Country Club off Elliot on the western edge of the Freescale site, enter back parking lot
Time: 3:30 - 5:00pm Presentation
For more information, please call Chuck Weitzel (Chapter Chair) at (480) 413-5906.

May Meeting Announcement for the Phoenix Chapter of the IEEE EMC Society

Date: Wednesday, May 2nd, 2007
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 menu), 7PM Meeting and Presentation
Title: Understanding the Latest Changes to IEC 17025 for EMC Lab Accreditation
Speaker: Daniel D. Hoolihan, President of Hoolihan EMC Consulting

Abstract: ISO/IEC 17025 is used as the basis of accreditation for testing and calibration laboratories. This standard was recently updated in 2005. A summary and review of the 17025 standard will be conducted. This talk will include an analysis of the 2005 changes to the standard including a comparison of the technical and the administrative requirements.

About the speaker: Dan Hoolihan has been actively involved with the ANSI-Accredited Standards Committee on EMC since 1985. He has been an active member of the Steering Committee of C63, including acting as its recording secretary, for over 15 years. Hoolihan has been chairman of Subcommittee 6 (SC-6 - Lab Accreditation) and SC-8 (EMC and Medical Devices) since their inception. Dan is the past-president of the IEEE EMC Society (1998-1999) and has been on the Board of Directors of the EMC Society of the IEEE since 1987. He has held many positions with the EMCS board in his years of service. He most recently served as the Chair of the 2002 IEEE International Symposium on EMC which was held in Minneapolis in August of 2002. He helped found the EMC chapter of the Twin Cities Section in 1985 and has been active in the local chapter since that time. Hoolihan has been consulting in EMC Engineering since January of 2000. He specializes in EMC-Laboratory evaluations, EMC standards, and EMC Education. He is a consultant to the United States Department of Commerce National Institute of Standards and Technology (NIST) in the area of Telecom Certification Body (TCB) and Conformity Assessment Body (CAB) evaluations. He is also an EMC and Telecom assessor for the NIST National Voluntary Laboratory Accreditation Program (NVLAP).

RESERVATIONS: Please call Daryl or Mary at Kimmel Gerke Associates in Mesa AZ at 480-755-0080. (If no answer, please leave a voice mail.) You may also register by email at dgerke@emiguru.com. 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 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
Membership Chair, Phoenix Section

RE-SEED

Retirees Enhancing Science Education through Experiments & Demonstrations

Overview

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

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

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

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

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