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[September Chapter Mtgs - summaries](#)

[AdHoc Nets, Integrated Rel, BroadNets, Sustainable Engng conferences](#)

[Qual Engr, Pb-Free Packaging classes](#)

[Upcoming Conf's in the SF Bay Area](#)

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**Download the [September GRID.pdf](#) (750 kB)**

The September issue of the **GRID.pdf** is full of opportunities to learn about new developments, master a new skill, and network with fellow professionals. Enhance your career -- attend a Chapter event or local Conference to improve your skills and knowledge, and to meet the movers and shakers in your profession!

Check for updated information during the month at our **GRID** website: [www.e-grid.net/](http://www.e-grid.net/)

**Chapter Meetings for September:**

SCV-CNSV - 9/3: **Entrepreneurs Special Interest Group** - meets most weeks on Friday afternoon. You are invited to attend ... [\[more\]](#)

SCV-CPMT - 9/8: **"Alternative Packaging Technologies for 3-D Packaging"** - the need for higher speed, lower power, smaller form-factors, and lower cost are driving system packaging to explore the third dimension ... [\[more\]](#)

SF-PES - 9/8: **"Improving Utility Business Processes & Workflow Through Cost-Effective Business Integration Initiatives"** - applying proven advances in business process management and workflow automation in a quest for improved performance ... [\[more\]](#)

SCV-COM - 9/8: **"Packet Sniffing: Security Vulnerabilities and Hardening"** - how attackers can use packet sniffers to compromise network security ... [\[more\]](#)

SCV-MTT - 9/9: **"Microwave High Power Device Measurements in an Isothermal Environment"** ... [\[more\]](#)

SCV-SP - 9/13: **"Anytime, Anywhere IP Communications"** - convergence of Voice, Video and Data onto a single infrastructure is delivering new opportunities, such as a host of VoIP services -- the beginning of what could be a revolution in the way we work, live, play and learn ... [\[more\]](#)

SCV-ED - 9/14: **"MEMS: Moving into the Mainstream"** - The growing momentum toward ubiquitous wireless internet access, sensor networks, and RF tags promises to pull MEMS technologies into the mainstream of the semiconductor industry ... [\[more\]](#)

SCV-EMC - 9/14: **September Social & Discussions** - No presentation is scheduled, but discussions will likely cover the recent EMC Symposium and reactions to its talks and tutorials - bring your own views and impressions - no reservations needed ... [\[more\]](#)

SCV-EMB - 9/15: **Presentation on Boston Scientific Corp and a tour of the BSC Fremont Facility** - RSVP required -- there is room for only 25 attendees ... [\[more\]](#)

SCV-PES/IAS - 9/15: **"Review of Low Voltage Electrical Distribution Equipment"** - low voltage panelboards and switchboards used in our industry - aimed at consultants, contractors and electrical facility engineers ... [\[more\]](#)

SCV-SSC - 9/16: **"Next-Generation Compact Modeling"** - Moore's Law scaling has led to ultra-short channel length devices with multi-GHz performance and a host of new challenges including a range of issues that face compact modeling of nano-meter scale technology ... [\[more\]](#)

SCV-CNSV - 9/21: **"Reliability Tools and Integration for the Manufacturing Phase"** - the majority of the reliability effort is spent in the design and prototype phase; what can be done to improve the reliability during the manufacturing phase? ... [\[more\]](#)

**FREE Admission to Most Events at WESCON - Sept 21-23** [\[more\]](#)  
You can get a free pass to the pavilions (Design & Analysis, Test & Measurement, Power Components, Supply-Chain Management, RFID), plenary talks, the autonomous-vehicle showcase, job fair, and much more -- everything except NANOWorld and the Tutorials. Spend a few days in Anaheim at WESCON this month and catch up on new developments and trends. See the two-page announcement in the [GRID.pdf](#) for more details and a copy of the registration form.

OEB-IAS - 9/23: **"Changes in Industrial Power Management Systems"** - changes are being driven by PC operating systems: easier integration of power management into computer systems, the move away from the traditional human machine interfaces, the use of artificial intelligence to maintain power quality, and the technologies being implemented through the Web ... [\[more\]](#)

OEB-COM - 9/23: **"Real-World Experience with a Mobile Broadband Network"** - performance and deployment are evaluated under various radio conditions with stationary, pedestrian and vehicular mobility, with high spectrum efficiency achieved through adaptive modulation and coding, Hybrid ARQ, multiple user diversity and fast scheduling ... [\[more\]](#)

SCV-PSES - 9/28: **"Central Office Power & Ground Requirements and Design Solutions"** - a close look at bonding and grounding, from definitions to regional implementations; power considerations for different powering architectures; consideration of specific NEBS and ILEC requirements ... [\[more\]](#)

**The Council Marketplace**  
Do you require someone with special skills -- RF, reliability, communications, design, patent consultations? ... PCB layout, thermal measurements, SCSI, SANs? See our [Council Marketplace](#) page. Thank you for supporting our advertisers.

SF-IAS - 9/28: **"Interrupting Capacity and Short-Time Current Ratings"** - ratings of molded-case, insulated-case, and low-voltage power circuit breakers and their effect on time-current coordination ... [\[more\]](#)

SCV-EMS - 9/29: before-dinner talk - **"The Art of Commitment and The Science of Change"** - a forum on conquering corporate change ... after-dinner talk - **Walking A Tightrope with Resilient Packet Rings - A Startup Story** - insights to guide developers in anticipating changes and planning workarounds in the midst of changing requirements; challenges faced in working with engineering teams distributed around the globe ... [\[more\]](#)

SCV-CPMT - 10/13: **"A Novel X-ray Microtomography System with High Resolution and Throughput For Non-Destructive Imaging of Advanced Packages"** and **" $\mu$ CT Techniques In Combined 2D/3D High Resolution X-ray Systems"** - two approaches to 3-D X-ray inspection for failure analysis, with practical examples and images ... [\[more\]](#)

SCV-SSC - 10/21: **"Power-Performance Optimization Methods for Digital Circuits"** ... [\[more\]](#)

SCV-EMB - 10/20: **"Cochlear Implants for Profound Hearing Loss - Signal Processing Considerations"** - overview of the auditory system, then focus on signal processing in cochlear implants from early models to current multichannel implants and impact on speech perception and sound quality ... [\[more\]](#)

SCV-SSC - 10/21: **"Power-Performance Optimization Methods for Digital Circuits"** ... [\[more\]](#)

**IEEE International Integrated Reliability Workshop** [\[more\]](#)  
October 18-21, 2004 at Stanford Sierra Camp, near Lake Tahoe

IRW'04 provides a unique environment for envisioning, developing, and sharing reliability know-how for present and future semiconductor applications. All Workshop activities take place in a relaxed and rustic setting that promotes an atmosphere of interactive learning and knowledge sharing.

**Sessions on:** Gate Oxides - Interconnects - Hot Carriers - NBTI - high-k Dielectrics - posters

**9 Tutorials (included in fee):**

Gate Oxide Lifetime and Breakdown Degradation  
Alternate gate Dielectrics using C-V and I-V Electrical Metrics  
High-k Dielectrics: Instabilities, Defects  
EM Reliability-Cu/Low k Interconnects  
Advanced Back End of Line Reliability  
NBTI: What we know and need to know  
Modeling NBTI: Kinetics to Circuits  
Reliability of TFTs - Process to Device Issues

A single Registration Fee includes sessions, tutorials, proceedings, cd-rom, lodging and all meals. A student rate is available.

Please review the full program at [www.e-grid.net/conf/irw.html](http://www.e-grid.net/conf/irw.html).  
Space is limited, so please register as soon as possible.

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**BroadNets'04**

**First International Conference on Broadband Networks** [\[more\]](#)

October 25-29, 2004

San Jose Hilton and Towers

IEEE Communications Society, in cooperation with ACM SIGMOBILE

**BroadNets 2004** covers the entire gamut of next-generation networks with ultra-high bandwidth, all the way from access networks (xDSL, Cable, EPON, Broadband Wireless, multi-Gigabit uplinks) to regional and metropolitan networks to wide-area core networks.

The conference will consist of the following two symposia:

**Broadband Optical Networking** including WDM technologies, Ethernet and MPLS integration into the optical layer, Next-Gen SONET/SDH, as well as SAN extensions over DWDM/SONET/SDH.

**Broadband Wireless Networking** that is defined as covering high-speed wireless networking for access, regional and backhaul networks including backhaul capacity provisioning using wireless, including the WLAN networks and WMAN.

- Six Full-Day Workshops on: BaseNets -- BroadWise -- OBS -- PathNets -- GridNets -- BroadWim -- Traffic Grooming -- (Separate registration allowed)
- Four Half-Day Tutorials: Advancements in Optical Technologies and Architectures in Multi-service Metropolitan Networks -- Multimedia Transmission over Spectrum Agile Radio Wireless Networks -- Protection and Restoration in Emerging Optical Mesh Networks -- Industry Perspective on Optical Layer Survivability
- Two Full-Day Tutorials: Broadband Metro and Access Networks -- Wireless Broadband: Services, Networks, and Management

Review the Advance Program and registration form at [www.e-grid.net/conf/broadnets.html](http://www.e-grid.net/conf/broadnets.html)

**IEEE Int'l Conference on Sensor and Ad Hoc Communications and Networks** [\[more\]](#)  
October 4-7, 2004 at the Santa Clara Marriott

The convergence of the Internet, communications and information technologies, coupled with recent engineering advances, is paving the way for a new generation of inexpensive mobile devices, sensors and actuators. SECON'04 addresses the emerging field of sensor and ad hoc networks and systems for a broad range of applications relating to critical infrastructure protection and security, health care, the environment, energy, food safety, production processing, quality of life, and the economy.

**Sessions on:** Applications - Routing - Security - Quality of Service - Testbeds and Simulators - Data Analysis - Theoretical Models - Energy-efficient Design - Communications Architectures - MAC Protocols - Coverage - Localization - Network and Transport Layers - Connectivity and Topology Management - Data Gathering and Tracking - Network Management - plus Panels

**Four Tutorials:**

MAC Protocols for Wireless Sensor Networks  
Location Discovery in Sensor Networks  
Low Power Sensor Network Development with IEEE 802.15.4 and TinyOS  
Networks of Mobile Sensors

Review the Advance Program and registration form at [www.e-grid.net/conf/secon.html](http://www.e-grid.net/conf/secon.html)

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**2004 Engineers for a Sustainable World National Conference**

Theme: "Solutions for a Shrinking Planet: Sustainable Engineering and Enterprise for Human Development" [\[more\]](#)

- September 30 - October 2, 2004
- On the Stanford University Campus
- Multidisciplinary: Electrical, Mechanical, Civil, Bio engineers
- Meet NGO officers, leaders in sustainable development
- Low Registration Fees -- Full Registration is only \$250
- Early-bird registration Deadline: Aug. 31st (save \$25)

Internationally renowned keynote speakers will give overview talks on the current status of engineering-based development. Workshops led by top scientists, product designers, community leaders, and social entrepreneurs will explore sub-topics in detail. Through these workshops, participants will learn about creating partnerships, assessing community needs and constraints, designing appropriate technologies, and implementing solutions in a locally sustainable manner, with technology-based solutions to concerns of developing communities. Presentations on current projects, discussions of lessons learned in the field, and nightly film selections will facilitate discussion, knowledge transfer, and networking. We will examine the interface between technologies and social/cultural concerns, environmental issues, and local and global market forces. Our motivation: we seek to secure basic human rights for every individual on the planet.

Keynote Speakers:

- Patricia D. Galloway, President, American Society of Civil Engineers
- William McDonough, Named **Hero for the Planet** by **Time** Magazine
- Dr. Jeffrey D. Sachs, UN Advisor, Millennium Development Goals
- Dr. Barbara Waugh, co-founder of the Sustainability Network, HP

Review the Advance Program and registration form at [esw.stanford.edu/conf04/](http://esw.stanford.edu/conf04/)

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**CQE EXAM PREPARATION COURSE** [\[more\]](#)

*Becoming certified as a Quality Engineer (CQE) can be valuable to your employer and your career.*

Ops ALaCarte is offering this Exam Preparation Course. Students have found it very valuable in preparing for the exam. *The success rate in passing is several times higher for students who have taken the course compared to those who have not!*

Even if you are not planning on taking the exam but need a good, in-depth course in quality engineering, this can benefit you substantially.

**Course Starts October 12th**

One-Day IEEE Short Course: **"Mandated Pb-Free Solder Assemblies: Exploring the Transition's Impact on Product Reliability"** [\[more\]](#)

- Tuesday, October 5, 2004
- At Hewlett-Packard Co, 10435 N. Tantau, Cupertino ([map](#))
- 8:00 AM Registration; 8:30 AM - 4:30 PM Symposium
- Fee: \$125 (IEEE Members), \$150 (non-Members) thru Sept. 22
- For managers, engineers, program/production mgrs

As governments in Europe and Asia begin the phase-in of their "Removal of Hazardous Substances" regulations, electronics designers and manufacturers are in the final stages of changing from classic tin-lead solders to various compositions of Pb-free solders. The industry has 100

**Instructors:** Fred Schenkelberg, CRE, CQE; Jurek Zarzycki, CRE, CQE  
**Schedule:** Eight consecutive Tuesdays 6 - 10 PM from October 12 thru November 30, 2004  
**Location:** Santa Clara  
**Course Fee:** \$995 including materials (Textbook & Solutions Book/Answer Key distributed the first night). A 25% discount is extended to anyone who is currently unemployed. Please note that this course fee does not include the fee for the examination which is collected by ASQ directly.  
**Registration:** This course fills up quickly and seating is limited. To register, or for full information, please email ASAP to: [cqeprep@opsalacarte.com](mailto:cqeprep@opsalacarte.com) or call (408) 472-3889  
**Exam Date:** December 5th, 2004

years of experience and reliability optimization for tin-lead solders; the new solders present us with considerable uncertainty. Will our computers, wireless devices, and other products show considerably lower reliability over the next few years? What are the risks for which we must be planning?  
The focus in this special one-day event is on the technical engineering impact of the transition. What do we know, what do we not know, and where are the remaining significant risks?  
Lectures:

- **"Lead-Free Solder Joint Reliability"** - Jean-Paul Clech, Solder Reliability Solutions
  - **"Managing Compatibilities for Lead-Free Transition and Environmental Compliance"** - Dr. Dongkai Shangguan, Flextronics
  - **"Failures at the Customer and the Influence of Pb-Free"** - Dr. Craig Hillman, Univ of Maryland
- Plus panel discussions based on attendee concerns and experiences.

## Summary of Upcoming Bay Area Conferences -- find one in your technical specialty

### SEPTEMBER:

Sept 1-5: **IEEE Int'l Conference on Engineering in Medicine and Biology (EMBC'04)** Westin St. Francis Hotel, SF [\[more\]](#)  
... Technical Sessions, Workshops, Tutorials, Seminars, "Best Practices" roundtables, more. Reduced rates through July 1. See the one-page flyer in the [GRID.pdf](#), or visit [www.e-grid.net/conf/emb.html](http://www.e-grid.net/conf/emb.html).

Sept 12-15: **IEEE International SOC Conference (SOCC'04)** Santa Clara Hilton, Santa Clara [\[more\]](#)  
... advances in **Systems-on-Chip** technologies and applications -- Design Methods, Design Tools, Design Automation, Manufacturing, and Test. Visit [www.e-grid.net/conf/socc.html](http://www.e-grid.net/conf/socc.html).

Sept 21-23: **IEEE Wescon/2004**, Anaheim Convention Center [\[more\]](#)  
... Includes **NANOWorld**, **Enterprise Integration EXPO**, the Autonomous Vehicle Technology Showcase, exhibits -- owned by engineers and run by engineers to benefit engineers. Most events are **free**. See the two-page flyer and registration form in the [GRID.pdf](#), or visit [www.e-grid.net/conf/wescon.html](http://www.e-grid.net/conf/wescon.html).

Sept 27-30: **GSPx: the International Embedded Signal Processing Conference and Exhibition**, Santa Clara Convention Ctr [\[more\]](#)  
... Includes **Executive Summit**, Technical sessions and workshops, exhibits. Visit [www.e-grid.net/conf/gsp.html](http://www.e-grid.net/conf/gsp.html).

### FREE IEEE Professional Development Workshops - [\[more\]](#)

Tuesday, Sept 28 -- from IEEE-USA:

- **"Taking Charge of Your Destiny: The New Rules for Career Success"** (2 hours)
- **"Networking for Success"** (2 hours)
- **"Project Management"** (4 hours)

Organized by IEEE\*USA and PACE, attendance at these PD Workshops is **free** with the (**free**) admission pass to the GSPx Expo at the Santa Clara Convention Center. Sign up today! See [www.e-grid.net/conf/gsp.html](http://www.e-grid.net/conf/gsp.html)

### OCTOBER:

Sept 30 - Oct 2: **Engineers for a Sustainable World National Conference**, Stanford Univ Campus [\[more\]](#)  
... "Solutions for a Shrinking Planet: Sustainable Engineering and Enterprise for Human Development" - the interface between technologies and social/cultural concerns, environmental issues, and local and global market forces.

Oct 4-7: **SECON'04: IEEE Int'l Conf on Sensor and Ad Hoc Communications and Networks**, Santa Clara Marriott [\[more\]](#)  
addressing the new generation of inexpensive mobile devices, sensors and actuators, and a broad range of applications.

Oct 18-21: **IRW'04: IEEE Int'l Integrated Reliability Workshop**, Stanford Sierra Camp, near Lake Tahoe [\[more\]](#)  
... ensuring semiconductor reliability through component fabrication, design, characterization, and analysis tools, including Cu interconnects & low-k dielectrics, NBTI, ultra-thin gate oxide reliability, the reliability of deep sub-micron, SOI devices, reliability modeling and simulation, and the reliability of future technologies such as high-k gate dielectrics.

Oct 25-29: **BroadNets'04: First International Conference on Broadband Networks**, San Jose Hilton and Towers [\[more\]](#)  
... next-generation networks with ultra-high bandwidth - Optical and Wireless broadband networks.

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Technologists who are not members of IEEE are **encouraged to subscribe, at no cost, to this e-GRID Newsletter**, to find opportunities to "network" with the electrical engineering community and hear about Chapter events through our twice-monthly emails. This is a controlled list (ie, no spam) -- [get more information](#). You provide your own subscribe/unsubscribe services and can join and leave this IEEE DList when desired. To update the list, send an email message to:

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You may need to "whitelist" our email addresses in your spam filter to allow our Council news to reach you; I suggest whitelisting my email address, plus that of the DLIST: [e-GRID@listserv.ieee.org](mailto:e-GRID@listserv.ieee.org).

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Please invite other non-Member technologists in the Bay Area to join this list, to receive notification of Chapter meetings, tutorials, workshops, conferences, and other news within the San Francisco Bay Area Council, IEEE. See <http://www.e-grid.net/>

Correspondence to [Paul Wesling](#), Council Communications Director