CHAPTER MEETINGS

SPECTRUM + SCV Section - 10/4 | Silicon Valley's Impact on the Automotive Industry - panelists GM, BMW, Tesla ...
SCV-Phot - 10/4 | Green Photonics Trends for the Next Decade: Communications, Lighting, Solar - GaN-on-Si, new designs ...
SCV-TMC - 10/6 | Product Management Essentials for Project and Program Manager - development, success, working together ...
OEB-Life - 10/11 | Sustainable Transportation Systems: Planes, Trains, Automobiles, and Ships - energy usage, congestion pricing ...
SCV-CS - 10/11 | AI Techniques and Applications: Surprising Solutions That Really Work - design space, search algorithms ...
MONTEREY - 10/11 | "Womb to Tomb" -- The Do's and Don'ts of Designing Systems for Mass Production - phases, releases ...
SCV-EMC - 10/11 | Antennas for Radiated Immunity Measurements: A Never-Ending Story - immunity measurements, beamwidth ...
SCV-EDS+Nano - 10/11 | Carbon Electronics: From Materials Synthesis to Circuit Demonstration - CNT transistor, digital logic, ...
OEB-Mag - 10/12 | Magnetism in Hybrid Nanostructures and Complex Oxides - surface spin, properties, probes, transitions ...
SCV-CPMT - 10/12 | Silicon Carbide (SiC) Sensing Technology for Extreme Environments - SiC manufacturing, growth, metals ...
SCV-ComSoc - 10/12 | Savvis Converged Cloud - Optimized Performance over Shared Private Network Infrastructure ...
SCV-PV - 10/12 | How Streamlined Permitting will Allow Home Solar to Scale - addressable market, $5 billion CA growth ...
SCV-Section - 10/15 | An Analog Life: Remembering Jim Williams - circuit designer, artist, scientist, mentor, teacher, new exhibit ...
SCV-Nano - 10/18 | Is Nanotechnology the Next Wave in the Medical Device Industry? - miniaturization, biomaterials, implantable ...
SCV-CNSV - 10/18 | Leveraging Consulting to Build a Bionic Technology Company - key resource, iterations, prototypes ...
SCV-PACE - 10/19 | Career Networking: When and How to Switch Jobs - hidden job market, specific techniques, strategies ...
SCV-PES - 10/19 | All You Need to Know About Lead-Acid Batteries - sizing, gassing, capacity testing, alloys vs cycling ...
SCV-CS-3D - 10/19 | The NASA Ames Vertical Motion Simulator: A Facility Engineered for Realism - design, modalities, interface ...
SCV-EMBS - 10/19 | An Autonomous Implantable System with Locomotion - sub-mm size, power transfer, efficiency ...
SCV-Rel - 10/21 | Quality: On the Road to Performance Excellence - 1-day seminar: over 20 talks in 5 tracks, reception ...
SPECTRUM + SCV Section - 10/24 | Reinventing Infrastructure for High-Speed Rail - panelists, research: IBM, Siemens, Cisco ...
SCV-CE - 10/25 | The Anatomy of Wearable Computing - devices, hardware, app tools, web services, incubation, testing ...
SF-IAS - 10/25 | Parallel Power Solutions - cost, space, responsibility, complexity, benefits ...

Conference Calendar

Oct 25-27: ARM Technology Conference and Exhibition - Santa Clara Convention Center
Oct 27: Int'l Solar Energy Technology Conference (ISETC) - Biltmore Hotel, Santa Clara
Nov 3-4: Symposium on Energy Efficient Electronic Systems (E3S) - Banatao Auditorium, UC-Berkeley
Nov 6-9: Android Developer Conference (AnDevCon) - Hyatt Regency Burlingame
Nov 13-17: 37th Int'l Symposium for Testing and Failure Analysis - San Jose Convention Center
Nov 29 - Dec 2: Printed Electronics USA Conference - Santa Clara Convention Center
Dec 12-14: 3D Architectures for Semiconductor Integration & Packaging - Hyatt S.F. Airport

CALLS FOR PAPERS:
March 19-21: International Symposium on Quality Electronic Design - Techmart, Santa Clara - Abstracts Due Oct 12th

Santa Clara University Grad School of Engineering
3-Part Solar Technology Series: Photovoltaics
- Introduction to Photovoltaics; - Function & Design of Solar Cells - Advanced Photovoltaics

Career Development
Professional Skills Courses
- Management Essentials - Meeting Management - Email Writing - Project Management - and more
EMC: FCC, EU, Int'l Compliance - Nov 7-11

Chapter Seminars/Workshops
Soft Error Rate (SER) Workshop - Oct 27th
Current Status and Future Directions of Non-Volatile Memory Technology - Nov 4
Nanophotonics and Imaging - Nov 15th

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MARKETPLACE – Services
From the Editor

As the IEEE gives more focus to the technologies that make the SF Bay Area famous, it shifts additional resources to our area. An example is the two Webinars that SPECTRUM magazine is broadcasting from Mountain View in October – one on automotive technology, and the other on high-speed rail. Since the “live” event is at the Computer History Museum, all local IEEE members are invited to attend. See details in later pages of this GRID (for October 4 and October 24), or use our QR code.

If you’re able to attend, you’ll find interesting talks, expert panelists, and a chance to get your questions answered!

Paul

NOTE: This PDF version of the IEEE GRID – the GRID.pdf – is a monthly publication and is issued a few days before the first of the month. It is not updated after that. Please refer to the Online edition and Interactive Calendar for the latest information: www.e-GRID.net
Do you provide a service?  Would you like more inquiries?

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Download Rates and Services information:

www.e-grid.net/docs/marketplace-flyer.pdf
The Berkeley Symposium on Energy Efficient Electronic Systems was established in 2009 to promote collaborations among researchers working on increasing energy efficiency for information processing systems.

Keynote Speaker: Dan Hutcheson, VLSI Research, Inc

Data Centers Perspective: Cedric Lam, Google

Technical Areas:
- Low voltage tunneling FETs
- Low voltage nanomechanical logic
- Energy efficient spintronic logic
- Energy efficient memory and storage devices
- Energy efficient chip scale interconnects
- Low voltage CMOS circuits and architectures

Only $200, through Oct 7
Register Now!

Confirmed Speakers:
- Elad Alon, U of California, Berkeley, USA
- Jeffrey Bokor, U of California, Berkeley, USA
- Paul Franzon, North Carolina State U, USA
- Wilfried Haensch, IBM Watson, USA
- Adrian Ionescu, EPFL, Switzerland
- Tsu-Jae King Liu, U of California, Berkeley, USA
- Hideo Ohno, Tohoku University, Japan
- Jan Rabaey, U of California, Berkeley, USA
- Heike Riel, IBM Zurich, Switzerland
- Robert Rogenmoser, SuVolta, USA
- Toshitsugu Sakamoto, LEAP, Japan
- Alan Seabaugh, Notre Dame U, USA
- Naresh Shanbhag, U of Illinois, USA
- Vladimir Stojanovic, MIT, USA
- Philip Wong, Stanford University, USA
- Ming Wu, U of California, Berkeley, USA
- Peter Wyatt, MIT Lincoln Lab, USA
- Eli Yablonovitch, U of California, Berkeley, USA
- Naoki Yokoyama, AIST, Japan

CPMT, EDS and Reliability Chapters

Soft Error Rate (SER) Workshop
Thursday October 27, 2011 – Cisco Systems, San Jose
Registration and lunch at 11:30 AM      Talks from Noon – 5:00 PM

The 3rd annual IEEE Santa Clara Valley SER workshop provides a unique forum for component manufacturers, assembly houses, and electronic system manufacturers to exchange innovative ideas and recent results on the measurement, monitoring, and control of alpha emission from packaging materials and manufacturing processes. Built on the success of our workshops held in 2009 and 2010, this year’s event will continue to cover a wide range of areas and subjects critical to the control of device soft error rates. Most talks have been selected; see the website for full program.

Access last year’s talks as webcasts, from the Chapter website.

Topics to be covered:
- Techniques and approaches for alpha emissivity measurements
- Device soft error case studies (diagnosis and countermeasures)
- Other cases of Single Event Upset (SEU)
- Wafer processing induced alpha emission
- Assembly process control and monitor
- Success stories of alpha emission control

No charge for Workshop (includes light lunch)
Held at Cisco Systems, 285 West Tasman Drive, San Jose
Also broadcast LIVE on the Internet, via WebEx
More information and to register:

www.cpmt.org/scv
CALL FOR PAPERS

ISQED 2012
13th International Symposium on
QUALITY ELECTRONIC DESIGN

March 19-21, 2012
Techmart Center, Santa Clara, CA, USA

Paper Submission Deadline: October 12, 2011
Acceptance Notifications: November 24, 2011
Final Camera-Ready paper: January 10, 2012

Papers are requested in the following areas:
A pioneer and leading multidisciplinary conference, ISQED accepts and promotes papers in following areas:

• System-level Design, Methodologies & Tools
• FPGA Architecture, Design, and CAD
• Design of Embedded Systems
• Advanced 3D ICs & 3D Packaging, and Co-Design
• Robust & Power-conscious Circuits & Systems
• Emerging/Innovative Device Technologies and Design Issues
• Design of Reliable Circuits and Systems
• IP Design, quality, interoperability and reuse
• Design Verification and Design for Testability
• Physical Design, Methodologies & Tools
• EDA Methodologies, Tools, Flows
• Design for Manufacturability/Yield & Quality
• Effects of Technology on IC Design, Performance, Reliability, and Yield

Submission of Papers
The guidelines for the final paper format are provided on the conference web site. Paper submission must be done on-line through the conference web site at www.isqed.org. In case of any problems email isqed2012@isqed.org. ISQED papers are published in IEEE Xplore.

CALL FOR PAPERS

IEDEC 2012
Interdisciplinary
Engineering Education Conference

March 19-20, 2012
Techmart Center, Santa Clara, CA, USA

Paper Submission Deadline: October 12, 2011
Acceptance Notifications: November 24, 2011
Final Camera-Ready paper: January 10, 2012

Papers are requested in the following areas:
IEDEC accepts and promotes papers in following areas:

• Latest Educational Hardware and Software Tools and Techniques
• Advanced and Innovative Design Automation Tools
• Exploring the Increasing Role of Engineering in our Life
• Promoting Innovation and Creativity in Engineering Design
• Management of Design
• Trends in Engineering Education
• International and Global Aspects of Engineering Education
• Student Projects and Internships
• Learning Environments, Tools, and eLearning
• Combining Teaching and Research
• E-learning and E-assessment,
• Continuing Education & Its Delivery
• Collaboration Between Universities, Industry, and Government
• Engineering Education & Women
• Distance Learning and Distance Teaching
• Engineering Education Outreach

Submission of Papers
The guidelines for the final paper format are provided on the conference web site. Paper submission must be done on-line through the conference web site at www.iedec.org. In case of any problems email info@iedec.org. IEDEC papers are published in IEEE Xplore.
These 1-day short-courses on cutting-edge technology topics is offered by Santa Clara University's School of Engineering and taught by leading industry experts. These programs enable the working professionals in the Silicon Valley and SCU engineering students to gain a good understanding of the specific technology area and its latest developments as well as networking with the speaker and other industry professionals.

**Introduction to Photovoltaics:**
Wednesday, October 5, 2011; 12:00pm - 5:00pm
Speaker: Dr. Peter Borden; Santa Clara University

**Function and Design of Solar Cells:**
Wednesday, October 19, 2011; 12:00pm - 5:00pm
Speaker: Dr. Peter Borden; Santa Clara University

**Advanced Photovoltaics:**
Wednesday, October 26, 2011; 12:00pm - 5:00pm
Speaker: Dr. Peter Borden; Santa Clara University

For more information/assistance, call LeAnn at 408-554-4765

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The world's largest and most comprehensive event on the new electronics

**Nov. 29 – Dec. 2, 2011**
Santa Clara Convention Center

**Printed Electronics USA**

The eighth annual Printed Electronics USA conference and exhibition covers all the applications, technologies and opportunities. This is the World's largest event on the topic.

Printed Electronics USA gives the big picture, not least by inviting leading speakers from around the world from a range of industries including consumer goods, healthcare, military, electronics, advertising, publishing and others. Commercialization and the full range of technologies are the emphasis, from interactive packaging and promotional posters to sensing fabrics and ultra low cost wireless identification tags.

**Photovoltaics USA** covers the solar cell sector. All the latest developments in thin film, organic, printed photovoltaics as well as emerging technologies growing alongside the more established ones, such as luminescent concentrators and infrared harvesting.

**Technical Sessions**
A prestigious program with over 70 technical presentations – see the Advance Program.

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**Master Classes on Nov 29, Dec 2** – interactive sessions:
- Introduction to Printed Electronics
- Displays & Lighting
- Thin Film Photovoltaics: Principles/Technologies/Market
- Materials
- Logic, memory & circuitry design for the new electronics
- Printing Technologies
- Creating New Products with Printed Electronics
- RFID: its Progress towards being Printed
- Energy Harvesting & Storage for Small Electronic Devices

**Tradeshow**
Over 100 leading companies will be showcasing innovative technologies and commercial applications in the field of printed electronics and photovoltaics. This is the world’s biggest tradeshow on the topic and an ideal place to meet your suppliers, customers and partners in one place. Participate in Demonstration Street, featuring examples of printed electronics in action.

**Save through September 28th**
Use code "IEEE25" for additional 25% discount thru Dec.1. Exhibits-only option available.

www.IDTechEx.com/peUSA
**Management Essentials**
- **Date/Time:** Th/Fri, Oct 13-14, 9:00AM – 5:00PM
- **Location:** – TIBCO Software, Palo Alto
- **Fee:** $625 for IEEE Members; $700 non-members

"Thank you!! I wish I could have had this knowledge along time ago when I first became a supervisor."
- Sales Operations Supervisor, @Road

**Transitioning from Individual Contributor to Manager**
- **Date/Time:** Thursday, Oct 20, 8:30AM-4:30PM
- **Instructor:** Andrew Oravets
- **Location:** Brocade Communications, San Jose
- **Fee:** $400 for IEEE Members; $500 non-members

"Excellent! The instructor's experiences have clearly demonstrated direction and a path I would like to experiment with. This class was very clear and concise"

Upgrade your skill set – prepare for future challenges

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**Clear Business and E-Mail Writing**
- **Date/Time:** Thurs, Oct 27, 9 AM – 5 PM
- **Location:** TIBCO Software, Palo Alto
- **Fee:** $425 for IEEE Members; $500 non-members

**Project Management: Team-Based Accountability** - PMI Certified
- **Date/Time:** Tues-Wed, Nov 8-9, 9:00AM – 5:00PM
- **Location:** TIBCO Software, Palo Alto
- **Fee:** $625 for IEEE Members; $700 non-members

**Meeting Management**
- **Date/Time:** Tues-Wed, Nov 8-9, 9:00AM – 1:00PM
- **Location:** TIBCO Software, Palo Alto
- **Fee:** $350 for IEEE Members; $425 non-members

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For complete course information, schedule, and registration form, see our website: [www.EffectiveTraining.com](http://www.EffectiveTraining.com)

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**AnDevCon Comes Back to Burlingame!**
AnDevCon II is the technical conference for software developers building or selling Android apps. Whether you're an enterprise developer, work for a commercial software company, or are driving your own start-up, if you are building Android apps, you need to attend AnDevCon. You’ll find hundreds of experienced developers and engineers (like you) choosing from more than 70 classes to bring Android open source development to a high level.

**Exhibit Hall hours:**
- **Tuesday, November 8th** 11:00 am – 6:45 pm
- **Wednesday, November 9th** 10:00 am – 2:30 pm

“This was a great conference! The scope and breadth of classes gave a great opportunity to learn more about Android development in general AND gave the opportunity to network with other people at all levels. It’s a great learning place with wonderful people!"
- Andrew Mauer, Sr. Project Manager, B-Line Express, Inc.

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**Keynotes:**
- “Android Awesomeness!” Chet Haase and Romain Guy, Google
- “Developing Consumer Apps in a Really, Really Big Company”, David Baldie and Andrew Peret, AmEx

**Technical Classes:**
- Android Fundamentals: What I wish I knew when I started!
- Creating a Modular Framework
- What’s New in Android Tablet Dev’t with Honeycomb
- Web App Development with PhoneGap
- Taking Advantage of Apache Maven
- Creating ePub Books
- Android Variants, Hacks, Tricks
- Save the Battery! Design for Better Power Consumption
- Build Android Applications using Ruby
- Using HTML5

… plus dozens more

Earlybird registration thru October 21 – save $200
And save $100 by using Code “IEEE” on 4-day passport, or for free exhibits admission.

For information and to register, visit [www.AnDevCon.com](http://www.AnDevCon.com)
Conference: November 13-17, 2011  
Exposition: November 15-16, 2011  
San Jose Convention Center

Enrich your career and further the industry at the 37th International Symposium for Testing and Failure Analysis (ISTFA), November 13-17 in San Jose.

ISTFA™ is the best venue for learning new failure analysis techniques, solutions and enterprise for success. Acquire the latest knowledge from the field's leading professionals with six days of tutorials, short courses, technical presentations, panels, and user groups. Research leading-edge instruments and solutions at the industry's largest dedicated equipment exposition. Meet and network with hundreds of your peers from around the world. All this makes ISTFA your best opportunity to learn, network and advance your career.

16 TECHNICAL SESSIONS
- Alternative Energy (Photovoltaics, SS Lighting, etc.)
- Emerging FA Techniques and Concepts
- FA Process/Case Studies
- MEMS, Discretes and Optoelectronic Device FA
- Packaging- and Assembly-Level FA
- Finding Invisible Defects
- Defect Characterization & Metrology
- Test and Diagnosis
- Circuit Edit (Laser, FIB, etc.)
- Counterfeit Electronics Detection and Mitigation
- Photon-Based Fault Isolation Techniques
- Sample Preparation and Device Deprocessing
- Nanoprobing and Electrical Characterization
- Panel Discussion on ‘But How Do You Find an “Invisible” Defect?’
- Posters

9 TUTORIALS  Sunday & Monday, Nov 13-14
Continuously updated tutorial sessions with new and cutting-edge topics related to failure analysis. Two New Tutorials This Year!

EDUCATION SHORT COURSES  Friday Nov 18
Three New Courses!  Held at the San Jose Hilton
- Achieving Goals Through Effective Communication
- Counterfeit Electronics
- Cross-sectioning/De-packaging
- Curve Tracing Techniques for IC Failure Analysis
- Fault Isolation
- FIB Sample preparation for Failure Analysis
- Differentiating EOS/ESD

2011 Keynote Address
Dr. Joseph Michael from Sandia
tools and analysis used to identify the origins of the anthrax spores – A MUST ATTEND!

TECHNOLOGY-SPECIFIC USER GROUPS
Meet, share ideas, and discuss relevant issues in a noncommercial environment.
Planned topics are:
- FIB  • Nanoprobing  • Package & Assembly FA, 3D
- Finding the invisible defect

NETWORKING AND SOCIAL EVENT
- Tuesday evening, 7:30 PM
- Wine and Cheese at the Hilton Hotel

The EDFAS Board, ASM and the ISTFA Organizing Committee are working hard to bring another productive and fulfilling conference to fruition. We’re sure you’ll find ISTFA 2011 a truly memorable event.

REGISTER BY OCTOBER 7 – SAVE UP TO $125!
Discounted fees for EDFAS and ASM Members. Non-members of EDFAS receive a full year’s membership with their registration.

Additional information is on the ISTFA web site.
Plan and register at:  www.ISTFA.org

EXPOSITION
The ISTFA exposition is North America’s largest tradeshow of FA-related equipment and services. This promises to be an exciting year on the show floor where you will see the latest industry advances and network with vendors for problem-solving advice. Bring your questions, needs and concerns. Get solutions to your FA problems! The ISTFA exposition is your once-a-year opportunity to access the innovators, influencers, and decision makers – all in one location!

To exhibit, sponsor or advertise, contact Kelly Thomas at  Kelly.Thomas@asminternational.org  or 440.338.1733.
Immerse yourself in Best-in-Class design strategies for leading embedded architecture - ARM

This year’s ARM Techcon doubles your value with two events in one. Whether you are a hardware or software engineer, ARM Techcon 2011 offers classes, hands-on tutorials and training at all levels of expertise. Invest in your future today with a solid core of strategies, tools and methodologies for successfully incorporating ARM IP in your design. Choose to attend October 25th where the focus is on designing ICs using ARM cores, or October 26-27, where the focus will be on designing systems and developing software around ARM-based hardware. If your responsibilities span across both areas- we offer an all-access pass to attend the entire conference, the best value – plus there’s an IEEE discount. The exhibition floor is unique, based on which days you attend.

Get the Solutions for your ARM-Powered Designs

Keynote Talks
Keynote Addresses: Measuring and Enhancing Product Differentiation, Walden Rhines, Chairman and CEO, Mentor Graphics; 2020 in 26 Easy Steps, Mike Muller, Chief Technology Officer, ARM

ABOUT ARM
ARM designs the technology that lies at the heart of advanced digital products, from wireless, networking and consumer entertainment solutions to imaging, automotive, security and storage devices. ARM's comprehensive product offering includes 32-bit RISC microprocessors, graphics processors, enabling software, cell libraries, embedded memories, high-speed connectivity products, peripherals and development tools. Combined with comprehensive design services, training, support and maintenance, and the company's broad Partner community, they provide a total system solution that offers a fast, reliable path to market for leading electronics companies.

Exhibit at ARMTechCon®!
Don’t miss this opportunity to showcase your ARM-based products or technology solutions. Increase ROI, launch new products, influence target customers, expand your visibility. Contact Sean Raman, Sales Director, sean.raman@ubm.com, 415-947-6622.

October 25-27, 2011
Santa Clara Convention Center
- Chip Design Day
- System & Software Design Days

CHIP DESIGN CONFERENCE:
A one-day intensive conference for chip design teams working with ARM silicon IP and tools.
Sessions on: - SoC Architecture & Analysis - SoC IP - SoC Design & Verification - SoC Design for Reliability and Yield - SoC Verification of Challenging Structures

Sponsors:

SYSTEM AND SOFTWARE DESIGN CONFERENCE
Two days of courses and exhibits for system developers employing the ARM architectures.
Sessions on: - Software Debugging Tools and Techniques - Microprocessors/Microcontrollers/DSPs - Designing with Open-Source Software - Operating System Selections - Safety and Security - Low-power design with ARM - Multicore and Virtualization - Designing with Open-Source Software - Buses and Communication Channels

Sponsors:

Half-Day Tutorial:
“Networking and Connectivity,” Christian Legare, Vice President, Micrium

Register today:
e.ubmelectronics.com/armtechcon

Save 20% by using the promo code “GRID”!

A free Exhibition-Only pass includes access to the exhibits, keynotes, industry addresses, sponsored technical sessions, tear-downs, and opening-night reception..
Today the focus on 3-D integration and packaging has shifted from trying to understand the technology opportunity to one of understanding the practical challenges of technology adoption and commercialization, including who is getting there first, how, and at what cost. There remains a natural degree of uncertainty as companies work to secure a technology position, obtain new process and design tools, and new customers and new applications.

This conference continues to give a broad, yet thorough perspective on the techno-market opportunity and challenge offered by building devices and systems in the vertical dimension. Industry leaders from around the world are invited to speak on topics important to the emerging and on-going 3-D related efforts. The format of the conference and its presentations enables speakers to present the most up-to-date and forthright perspectives as possible. This conference provides a unique forum where one can gain the latest insights to bring clarity in the direction of their own efforts.

Monday Pre-Conference Half-day Symposium:
“3-D ICs and TSVs—Passing the Test”
- Automation of DFT   - Process Control Solutions
- Metrology and Standards   - TSV Array Macro-inspection

Sessions:
- 3-D Integration: Shaping the Future
- Techno-Market Views on the 3-D Era
- 3-D Design and Interposers
- 3-D Integration: Shaping the Future
- Application and User Perspectives
- Leading Consortia and Sponsored Research Efforts
- Tooling and Processes Hold the Key

Earlybird Rates through November 2nd (save $150). Corporate multi-attendee discount.

Full details: techventure.rti.org

2011 Wireless & EMC Seminar Program

Technology and Methods for FCC, EU and International Compliance

November 7-11, 2011   Elliott Laboratories, Newark

Join the experts from ACB, NTS and Washington Laboratories for a comprehensive overview of methods and requirements of EMC and Radio Regulations. This seminar will cover requirements for radio transmitters, processes in the "BRICK" countries (Brazil, Russia, India, China, Korea) as well as Asia-Pacific and South America, practical testing techniques, laboratory operations, and measurement methods.

The training will feature critical technical updates on regulations and policies from the FCC/TCB Council training in October 2009. Observe laboratory demonstrations of key concepts, compliance measurements, power, frequency, bandwidth, spurious emissions, and more.

Who Should Attend:
Design, development and test engineers and technicians for updates on test methodology from practicing experts. Laboratory management personnel involved in the maintenance of accreditation status or responsible for obtaining accreditation.

Module 1 (Nov 7-8):
"FCC, IC and EU Regulations" – a two-day comprehensive presentation on FCC, IC and EU requirements for Radio Certification.

Module 2 (Nov 9):
"Global Regulations for Wireless Devices" - a one-day comprehensive presentation focusing upon global wireless requirements.

Module 3 (Nov 10-11):
"Laboratory Measurement Methods for Wireless and EMC Requirements" - a two-day intensive presentation on laboratory methods to meet EMC requirements and best practices to obtain and maintain accreditation.

Register for all three and save $390.
Additional 10% off with discount code "WLA"

For more information: www.wll.com/EMC_California.html
3rd International Solar Energy Technology Conference (ISETC)
October 27, 2011 – Biltmore Hotel, Santa Clara

ISETC is the premier conference promoting innovative technologies related to the efficient creation, distribution, and usage of energy from solar rays. This includes Photovoltaics, Solar Films, Solar Cells, Solar Concentrating Systems, Solar Energy, Reflectors, Solar Energy Storage Systems, Inverters and Power Electronics, as well as Smart Grid and Nano-technologies.

Discounted registration through Oct 14 – only $145.

Review the Advance Program and exhibits:

www.isetc.org

Program:
- "I'd Put My Money on the Sun," Chris Norris, Alta Devices
- “Utility Scale Management of Large Capacity Inverters,” Erik Bakke, GE
- "Advanced Cell Technologies for Concentrated Photovoltaics," Homan Yuen, Solar Junction
- "Cost-effective High-capacity Polymer Energy Systems," Bozena Kaminska, IDme
- "PV Manufacturing - Status and Prospects," Melody Song, SEMI
- "The Secret to Bankability for Commercial and Utility-scale Solar Projects," Benjamin Compton, MeteoControl
- "Design, Modeling, and Optimization of Silicon Solar Cells and Modules," Victor Moroz, Synopsys
- Plus Panel Discussion, "Solar Financing and Job Opportunities," Moderator: Eric Wesoff, Greentechmedia

Half Day Symposium
Nanophotonics and Imaging
Tues. November 15, 2011 – National Semiconductor, Santa Clara

12:00 – 1:00pm Registration & Light Lunch
1:00 Welcome: Allen Amaro, 2011 Chair, IEEE SFBA Nanotechnology Council & Session Chair = Jeffrey Perkins, President, Yole Development
1:10 "Nanophotonics communications & SOC/3D interconnect" - Dr. Hughes Metras – Dir. North America, Leti
1:50 "Life beyond the diffraction limit: nano-scale imaging and lasers" - Dr. Xiang Zhang, Ernest S. Kuh Endowed Chair, UC Berkeley
2:40 "New Light at the End of the EUV Tunnel" - Dr. Hakaru Mizoguchi, CTO, Gigaphoton
3:20 "Metrology and Standards for NanoMaterials" - Dr. Herbert Bennett – NIST Fellow & Executive Advisor, NIST
4:10 Panel – Challenges & Breakthroughs in Photonics Moderator: Jeffery Perkins, President, Yole Dev’t. Panelists: Dr. Hughes Metras – Leti; Dr. Xiang Zhang – UC Berkeley; Dr. Hakaru Mizoguchi – Gigaphoton; Dr. Herbert Bennett – NIST
4:50 Wrap-up/Closing Remarks

Cost (Advanced Registration):
IEEE Members & Students $25,
Non-Members $30
For At Door Payment: Add $5.

RSVP from the website:
www.ieee.org/nano
IEEE Spectrum and the IEEE Santa Clara Valley Section present the first in this year’s series of emerging technology forums on the technology originating from Silicon Valley and its impact on the Automotive Industry. Expert panelists representing automotive manufacturers and industry researchers will discuss the new generation of innovations that are changing the automotive industry worldwide.

Will Silicon Valley define the future direction of America’s greatest manufacturing industry? Register today to attend, and listen to our distinguished panel to find out.

This is a live event with a maximum attendance of 350 people, so sign up today! For IEEE members who cannot attend in person, this event will be available on demand by Oct 10, 2011.

Introduction: Russ Lefevre, Chair, IEEE Electric Vehicles Committee

Moderator: Susan Hassler, Editor in Chief IEEE Spectrum

Panel Discussion
Overview: Brian Wynne, President of the Electric Drive Transportation Association

Industry Perspective
Byron Shaw, Managing Director - GM Advanced Technology Silicon Valley
Dirk Rossberg, Head of BMW Group Advanced Technology Office
Martin Eberhard and Marc Tarpenning, Founders of Tesla Motors

Industry Challenges
Don Hillebrand, Director, Center for Transportation Research Argonne Labs

Industry Analyst
John Voelcker, editor, GreenCarReports.com & AllCarsElectric.com
Green Photonics Trends for the Next Decade: Communications, Lighting, Solar

Speaker: Michael Lebby, GM and CTO, Translucent Inc.
Time: Networking/Light Dinner at 6:00 PM; Presentation at 7:00 PM
Cost: none
Place: Keypoint Credit Union, 2805 Bowers Ave, Santa Clara
RSVP: from the website
Web: ewh.ieee.org/r6/scv/leos

In April 2010, Michael Lebby joined Translucent Inc. based in Palo Alto, to head up the company's R&D efforts to commercialize rare earth oxides for epitaxial-based materials that have been developed over the past decade. Crystalline-based semiconductor rare-earth oxides exhibit a number of attractive properties for advanced substrate and device solutions that include GaN-on-Si for solid state lighting and power electronics, Ge-on-Si for CPV solar and GaAs based photonics and electronics.

Lebby led the drive for green photonics while heading OIDA in the mid 2000s. The adoption and acceleration of this new discipline has become a significant focus for the photonics industry.

Lebby's career has spanned all aspects of the optoelectronics business ranging from research and development, operations, manufacturing, and finance, to sales, marketing, and investing. Lebby has worked at RSRE for the British Government in the UK, AT&T Bell Labs, Motorola, Tyco Electronics, Intel, Ignis Optics (VC backed start-up that was sold to Bookham - now Oclaro), OIDA, and presently, Translucent.

With more than 180 USPTO utility patents issued in the field of optoelectronics, Lebby has been cited by the USPTO to be in the most prolific 75 inventors in the country from 1988-1997. Lebby is a Fellow member of IEEE and OSA, and has testified on behalf of the optoelectronics industry while working for OIDA on Capitol Hill. Lebby has given numerous talks, speeches, panel discussions, and interviews, on the subject of optoelectronics internationally over the past two decades. Lebby has 2 doctorates and a MBA from the University of Bradford in the UK.

Photonics technologies and products that have been based on semiconductors have experienced significant growth over the past decade, with examples from many consumer and fiber communication products that contain; lasers, displays, solar cells, and LEDs. This talk will review the status of green photonics as it relates to the photonics field, and will explore how the technologies will develop into more exciting products over the next decade.

One example of a new green photonics opportunity is figuring how to put photonics technologies onto large silicon wafers. The talk will show that compliant, lattice matched rare earth oxides (REO) for GaN-on-Si and Ge-on-Si offer a scalable solution that is cost effective and exciting.

- Ge-on-Si using REO will enable large, low cost semiconductor platforms for multi-junction high efficiency photovoltaic, solar cells, GaAs based photonics for communications, and GaAs electronics on silicon wafers.
- GaN-on-Si using REO will enable large, low cost semiconductor platforms for energy efficient Power FETs and high performance LEDs for solid state lighting

Green photonics technology and market philosophy has been evolving for years as a large portfolio of engineers and scientists strive for energy efficiency, cleaner solutions and improved health in their designs. Traditional photonics segments such as fiber communications, photonic lighting, solar, optical networking, and photonic device integration make up some of the green photonics segment. Data presented from OIDA based in Washington DC., will show that many classic photonic fields will become more 'green' through more efficient product design over the decade.
PRODUCT management is a murky role: poorly understood and inconsistently practiced across tech companies. It’s often confused with PROGRAM management and PROJECT management. Yet done well, product management is often a driver of market success and effective development. This session will try to define the basics of product management, contrast them with project/program management, and identify ways for all of us to work more effectively together.

We will solicit experiences from attendees about their interactions with product management (good and bad!) as a way to bring in real-world issues.

Target audience includes project/program managers, and first/second-line development managers whose teams interact directly with these various roles.

Rich Mironov is a serial entrepreneur, and currently CEO of a stealth startup. At earlier companies and consulting stints, he’s been VP Product Management/ VP Marketing, the go-to-market strategist and agile “product guy”. Rich is a veteran of four previous tech start-ups and dozens of consulting engagements. From 2006 through 2010, he provided full-time and interim consulting/mentoring to large and small technology companies.


Since 2001, Rich has been an interim executive, consultant or adviser to dozens of early-stage companies and larger technology firms including Yahoo, Cisco, Varian and VeriSign. From 2007 to 2009, he was CMO of Enthiosys, an agile product management consultancy.

Rich and Enthiosys also founded the first P-Camp, now spreading around the country as Product Camps. These semi-unstructured get-togethers provide product managers an opportunity to network, teach, learn and share.

Rich has a BS in Physics from Yale with a thesis on dinosaur extinction theories, and an MBA from Stanford.
AI Techniques and Applications: Surprising Solutions That Really Work

Speaker: Jason Lohn, Associate Research Professor, ECE Dept., Carnegie Mellon University, Silicon Valley Campus

Time: Networking, pizza at 6:30 PM; presentation at 7:00 PM

Cost: none

Place: Cadence / Bldg 10, 2655 Seely Ave, San Jose

RSVP: from website

Web: sites.ieee.org/scv-cs

Jason Lohn is an Assoc. Research Professor of ECE at Carnegie Mellon Silicon Valley. Previously he led Evolvable Systems research at NASA Ames Research Center, worked in search quality at Google, was a Visiting Scholar at Stanford, and worked as an engineer at IBM. He received his MS and PhD in Electrical Engineering from the University of Maryland at College Park, and his BS in Electrical Engineering from Lehigh University. He has over 50 technical publications and his work has been featured in Wired magazine, MIT Tech Review, and Popular Science. He was a co-founder and co-chair of six NASA/DoD Conferences on Evolvable Hardware, and serves as an Associate Editor of IEEE Transactions on Evolutionary Computation.

Current methods of designing and optimizing antennas by hand are time and labor intensive, limit complexity, and require significant expertise and experience. AI search algorithms can overcome these limitations by automatically searching the design space and finding effective solutions that are closer to limits imposed by physics. For example, our algorithms have discovered counter-intuitive antenna designs that out-perform traditionally designed systems. While optimization modules are commonly available in commercial RF CAD tools, they are typically simple parametric methods, and no system yet offers an antenna synthesis capability. We discuss the antenna synthesis system we are developing and its use in a variety of applications, including a project that produced antennas that flew in space on NASA’s Space Technology 5 (ST5) mission.
The term “sustainable” applied to any activity has been used to imply the need to preserve the quality of life while not depleting natural resources for future generations or harming the environment. Indeed, the need to attain sustainable transportation systems is one of the greatest challenges to engineers today. In the United States, transportation systems account for approximately twenty-seven percent of the usage of energy, derived primarily from petroleum. Similar usage is found in other developed countries, and the usage is growing rapidly in developing countries such as China and India. The issues facing sustainable transportation systems are compounded by the fact that the global population is rapidly increasing, and affordable transportation is among one of the most important factors in increasing the standard of living in developing countries.

In this talk, the speaker will talk about some of the issues in congestion, such as diamond lanes, metering lights, and congestion pricing; public transit, such as high speed rail; energy, such as electric vehicles, ethanol, natural gas, and corporate average fuel economy (CAFE) standards; and the impact of transportation on the environment.
"Womb to Tomb" --
The Do's and Don'ts of Designing Systems for Mass Production

Speaker: Ken Gudan, Ricoh Research Lab
Time: Networking, food at 6:30 PM; Presentation at 7:00 PM
Cost: none ($2 for parking)
Place: UC-Santa Cruz (Room 180, Engineering Bldg 2), Santa Cruz
RSVP: by email, to Marcelo Siero, siero@ee.com
Web: www.ee.com/ieee

Ken Gudan has over 25 years EE/System design experience, 15 years explicitly for mass production consumer products. Most of that experience comes from Apple, where he was System Technical Lead for iMacs. Currently, he is working for Ricoh, and served as the Technical Lead of the Ricoh eQuill cloud-based E-Ink tablet device, which will be shipping soon. Ken has led the technical development of all varieties of projects, ranging from "idea figments" to "simple speed bumps" into production, and has supported factory builds worldwide. Currently, he is researching new technology opportunities for Ricoh, hoping to shepherd another new idea into production. Ken has a BS Computer Engineering from the University of Michigan and a MSEE from Purdue University.

It is exciting to be privileged to work with a team to take a design from concept into mass production. But what is it really like? What phases does the project go through? How much time does it take? What is expected of the engineering team? How do factories really "work"? What are key ingredients to a successful production ramp? What are the pitfalls to avoid? Ken Gudan has taken many ideas into production, both with Apple and Ricoh. He will draw on that experience to describe the process, expectations, fundamentals, and trials involved. Fundamental design rules, combined with actual factory results, will highlight each design phase. Time permitting, those attending will have the opportunity to solve intriguing real problems encountered, to exercise and grow everyone's creative problem solving skills!
Choosing the 'right' antenna for radiated immunity measurements can be quite challenging, especially above 1 GHz. On the one hand, a high-gain antenna is desired to reduce the amplifier power needed. On the other hand, the 3-dB-beamwidth needs to be taken into account to maximize the illuminated area. This is especially true for measurements according to IEC61000-4-3, MIL-STD 461 or full-vehicle testing according to MIL-STD 464.

This lecture will start with a short introduction to antenna basics, then show the difference between near and far field gain of logarithmic periodic and horn antennas with examples. Furthermore, examples of illuminated area calculations will be shown.

Hans-Peter Bauer has been at ROHDE & SCHWARZ since 1992, where he is a Senior Project Manager for EMC and RF Test Systems. Hans-Peter has more than 15 years of international experience in the field of EMC test systems and projects for commercial, automotive and military applications.

He received his electrical engineering degree (Dipl.-Ing.) from the Fachhochschule in Mannheim, Germany in 1992.
This year marks the 13th anniversary of the first publication of the carbon nanotube transistor. While there have been significant accomplishments in fundamental understanding and discovery, the engineering work that is required to harness carbon nanotube into useful technologies is just beginning. This presentation reviews recent progress in carbon nanotube electronics, focusing on digital logic applications including the transistor and the interconnect wires. We will start with material synthesis using chemical vapor deposition and present a method for growing predominantly aligned carbon nanotubes over hundreds of microns over full 4-inch wafers. Techniques to transfer these carbon nanotubes to arbitrary substrates will be presented. This enabled the development of a variety of applications including three-dimensionally integrated carbon nanotube circuits. This is followed by device fabrication and circuit demonstration, showing rail-to-rail, cascadable logic gates that point the way to large scale integrated circuits. We will present some recent advances in mitigating the impact of metallic carbon nanotubes for transistor applications and forming good metal to carbon nanotube contacts. Compact device models have been developed for circuit and system-level performance estimation and circuit design. The models are relatively robust and have been used successfully in many academic research groups independent of our involvement. Finally we will conclude with recent results of an experimental demonstration of GHz operation of ring oscillator digital CMOS circuits using metallic carbon nanotube and graphene as interconnects.
Magnetism in Hybrid Nanostructures and Complex Oxides

Speaker: Dr. Hariharan Srikanth, Professor of Physics, University of South Florida
Time: 3:00 PM
Cost: none
Place: Lawrence Berkeley Natl Lab, bldg 6-2202, Berkeley
RSVP: By Oct 8 by email with name, company, to Kate Jenkins, cajenkins@lbl.gov
Web: ewh.ieee.org/r6/oeb/mag/

Hariharan Srikanth is a Professor of Physics at the University of South Florida and directs the Functional Materials Laboratory which currently has 5 PhD students, 2 postdocs and a Research Assistant Professor. He received his Ph.D. in experimental condensed matter physics from the Indian Institute of Science in 1994. He was a postdoctoral researcher at Northeastern University from 1995 to 1998 and a Research Assistant Professor at AMRI, University of New Orleans from 1998 to 2000. In 2000, he joined the Physics Department at the University of South Florida as an Assistant Professor. His research spans a wide range of novel materials – complex oxides, magnetic nanocomposites, ferrofluids, superconductors and strongly correlated systems. He is a senior member of the IEEE and has over 145 publications. He has been serving as a Publication Editor and Program Committee member for the Magnetism and Magnetic Materials (MMM) conferences for several years and is the Publication Chair for the 2011 and 2012 MMM conferences. He is also a member of the editorial board of IEEE Magnetics Letters. Hari has organized symposia on magnetic nanostructures and complex oxides for the American Physical Society and the Materials Research Society. His current research program is funded by the Department of Energy, National Science Foundation and the Army Research Office.

Magnetic nanostructures are considered basic building blocks in spintronics and high-density data storage applications. Surface and configurational effects in oxide nanoparticle assemblies have been increasingly found to play significant roles in controlling the magnetic anisotropy. Modification of the surface spin structure in magnetic oxide nanoparticles can be achieved by methods such as controlling the particle shapes, use of mechanical milling or surfactant chemistry to alter the coordination of surface atoms and forming interfaces with non-magnetic metals. We discuss how these effects often lead to novel magnetic properties, useful for applications, such as tunable exchange bias and enhanced magnetocaloric effect (MCE). We will present dynamic radio-frequency (RF) transverse susceptibility as a powerful probe of surface and interface magnetism in nanostructures. We will also demonstrate MCE as a powerful tool to study first and second order phase transitions in complex oxides and discuss the influence of nanostructuring in mixed-phase manganites. Overall we will show how transverse susceptibility and MCE experiments have helped resolve finer aspects of the magnetic phase diagram in mixed-phase manganites leading to the emergence of a clearer understanding of the phase coexistence.

Research supported by US National Science Foundation, Department of Energy and the Army Research Office.
This presentation discusses advances in SiC manufacturing technology including growth of amorphous SiC thin films, polycrystalline SiC thin films and high-temperature metallization. Results of fabricating micro-scale SiC sensors and operating SiC sensors within high temperature (600°C), dry steam and high shock environments are presented. The stability of high-temperature metallization and ceramic packaging for SiC components will also be discussed.

Harsh environment sensors can be used to perform real-time, in-situ combustion monitoring leading to designs of power and propulsion systems (e.g. industrial gas turbines, and aircraft engines) with increased efficiencies, fuel flexibility and reduced CO2 emissions. Space exploration can be extended with high temperature, radiation-hardened materials, instrumentation and energy conversion devices using Silicon carbide (SiC), a ceramic, semiconductor material that is stable in high temperature, high radiation and chemically corrosive environments.

Debbie G. Senesky received the B.S. degree in mechanical engineering from the University of Southern California, Los Angeles, in 2001, and the M.S. and Ph.D. degrees in mechanical engineering from the University of California, Berkeley, in 2004 and 2007, respectively. From 2007 to 2008, she was a Microelectromechanical Systems Design Engineer for GE Sensing (formerly known as NovaSensor). She is currently a Research Specialist at the Berkeley Sensor and Actuator Center, UC-Berkeley. Her research interests include the development of silicon carbide (SiC) micro- and nano-systems, harsh environment materials, sensor technology and energy conversion.
Savvis Converged Cloud - Optimized Performance over Shared Private Network Infrastructure

Speakers: Aditya Joglekar, Director-Cloud Business Solutions, Savvis; Omar Smith, Network Solutions Architect, Savvis

Time: Networking and food at 6:00 PM; Presentations at 6:30 PM

Cost: $5 donation accepted for food & drinks

Place: National Semiconductor Auditorium (Bldg E), 2900 Semiconductor Dr., Santa Clara

RSVP: from website

Info: www.ewh.ieee.org/r6/scv/comsoc

Aditya Joglekar is Director of Cloud Business Solutions for Savvis. Responsible for Savvis’s diversified cloud business, Aditya works with customer and implementation teams, and drives product strategy. Prior to joining Savvis, Aditya was a manager at Deloitte Consulting. He has over 15 years of business and technology experience managing infrastructure teams, planning and executing technology strategies, and leading IT operations in data centers and enterprise architecture. Among key experiences, Aditya planned and executed private and public sector technology infrastructure consolidation initiatives, played a key role in mergers and acquisitions, and served as a key leader on outsourcing engagements.

Cloud Computing promises to deliver many benefits, including: reduced costs, operational efficiencies and economies of scale. The cloud will drive many new business models. But all these promises can only be kept if the network is able to deliver service guarantees (or SLAs) associated with each of the cloud layers- Application as a Service (AaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

In a pure Public Cloud based model, applications reside in a multi-tenant environment and are accessible via the public Internet. Whereas many early cloud adopters operate web facing applications in this public manner, many companies that are now migrating to the cloud are interested in Private or Hybrid clouds for better security and control. Uses include: test and development, cloud bursting (from private to public), and new delivery models for enterprise wide applications.

In the Private/Hybrid cloud model, best effort Internet performance is not good enough. In many cases, applications must perform just as well across the WAN as they would over an enterprise LAN. Latency, jitter, quality of service, interoperability, performance guarantees, and bandwidth management all become extremely important.

The Savvis Converged Cloud provides a solution. It integrates the high performance aspects of cloud services (compute and storage) with high performance networking. The Converged Cloud architecture has been deployed in the financial, voice, video, and SaaS markets. It is targeted at a business requirement where data volumes are high, and the application experience is critical.

There are three major elements in the Savvis Converged Cloud:
1. A managed virtualized hosting environment.
2. A secure, low-latency distribution network.
3. A unique business model that facilitates design of a complete, end-to-end, QoS enabled solution via the offering of standard end-to-end product sets.

These will all be described in detail by the two Savvis speakers at this highly informative and enlightening meeting.
In January 2011 SunRun issued a report for delivery to the Department of Energy (DOE) revealing local governments can save $1 billion over the next five years and make solar affordable for 50 percent of American homes by standardizing local solar permitting processes. A follow-on report by AECOM shows that simpler solar permitting processes could generate over $5 billion in additional growth for California, an increase in nearly 20 percent relative to the status quo. In this talk SunRun will discuss how streamlined solar permitting can add billions to the economy and significantly reduce the cost of solar installations to widen the total addressable market for home solar.

Matt Eggers works at SunRun because he believes the build-out of distributed, renewable energy will be the defining accomplishment for his generation. At SunRun, Matt leads business operations and software product management. Prior to SunRun, Matt led the stack operations team and was Director of Product Management at the stationary fuel cell company Bloom Energy. Before Bloom, Matt worked for Genentech where he led the commercial launch of Herceptin Adjuvant, a product with over $1 billion in sales, and was an Associate at Morgan Stanley Venture Partners. Matt has a B.S. in molecular biology from Duke University and an MBA from Stanford University, and sits on the board of Ecology Project International.
An Analog Life: Remembering Jim Williams

Panel: Bob Dobkin, Co-founder and CTO of Linear Technology; Steve Young, Founder and CTO, Bam Labs Inc; Steve Pietkiewicz, VP of Power Management Products, Linear Technology; Bob Reay, VP of Mixed Signal Products, Linear Technology; Greg Kovacs, Prof., Stanford University, Dept. of Electrical Engineering

Time: Reception at 6:00 PM; Presentations/Panel at 7:00 PM

Cost: none

Place: Computer History Museum, 1401 N. Shoreline Blvd, Mountain View

RSVP: from website

Info: www.computerhistory.org/events/#an-analog-life-remembering-jim

The world around us is a symphony of vibrations. From temperature, light, sound and a host of other physical quantities, we live in a world of continuously varying signals. Capturing these signals and making them do amazing things is the domain of the analog circuit designer. Join us for a special night on October 15 as we feature a panel discussion on the world of analog systems and one of its biggest stars, Jim Williams.

Williams was a remarkable man: an engineer who was self-taught yet set the bar for the entire technical community. Artist, scientist, mentor and teacher, come celebrate and reflect upon this man’s influence and on the world of analog systems around us with five distinguished guests:

- Co-founder and CTO of Linear Technology, Bob Dobkin,
- Founder and CTO, Bam Labs Inc, Steve Young,
- Vice President, Power Management Products, Linear Technology, Steve Pietkiewicz,
- Vice President, Mixed Signal Products, Linear Technology, Bob Reay,
- Professor, Stanford University, Department of Electrical Engineering, Greg Kovacs.
- Museum President & CEO, John Hollar will moderate the conversation.

On the same day, the Museum also opens its new exhibit: “An Analog Life: Remembering Jim Williams,” featuring Jim Williams’s famous analog workbench. We hope you can join us Oct 15 to see the exhibit and attend the panel.
Is Nanotechnology the Next Wave in the Medical Device Industry?

Speaker: Dr. Sudhi Gautam, Patni Americas Inc.
Time: Registration & light lunch at 11:30 AM; Presentation at 12:00 Noon
Cost: IEEE Members and Students $5; Non-Members $10
Place: National Semiconductor, Bldg E-1 CMA Room, 2900 Semiconductor Drive, Santa Clara
RSVP: from website
Info: www.ieee.org/nano

Dr. Sudhi Gautam is a Surgeon-turned-Biomedical Engineering Ph.D. with over 15 years of broad experience in Cardiovascular Devices, Neuro Devices, Endoscopy, Diabetes, Blood Processing, Bio-artificial Organs, Medical Imaging, Remote patient monitoring, Medical Information systems and Surgical Practice. Dr. Gautam is also a public speaker on the Medical Device Industry and Wellness Industry.

The explosion of scientific advances in biomedicine and the demographics of an aging population have fuelled the growth of the Medical Device industry. Due to a trend towards miniaturization in Medical Devices (sometimes to even scale them down to molecular levels), Nanotechnology has started playing an increasingly important role – which is what this discussion will revolve around. It is predicted Nanotechnology by itself may potentially generate ~ US$10 billion in revenue (CAGR of ~ 15%) by 2018 of which Medical devices and medical research may account for ~40%. As such Nanosensors and Nano devices are being conceptualized to monitor implantable medical device status, drug delivery, in-vitro diagnostics and cancer therapeutics. Nanotechnology also offers promising tools for surface modification of biomaterials through coating with nanoparticles to achieve optimal blood-device compatibility and is being used in medical devices, such as Hemodialysis systems, Hip implants or Bioartificial blood vessels.
Consulting can play a key role in supporting entrepreneurs while they develop new technologies to the point where the ideas are mature enough to attract outside investors. The right mix of consulting and startup work can provide the freedom to pursue unconventional products, technologies and markets.

This talk will focus on the pursuit of wearable, assistive, mobility devices at Tibion Corp. Consulting income was a key to Tibion's survival from initial ideas in 2001 to first venture funding in 2006 and on to product introduction in 2010. Topics to be discussed include:

- iterating to find and perfect the right technologies
- building prototypes for early market feedback
- addressing medical device challenges: reimbursement, quality systems and FDA clearances
- building a business that meets VC investment objectives
- market focus and clinical validation
- lessons learned

The first Tibion product - the Bionic Leg - is now in use at several clinics across the country. The operation of the Bionic Leg will be illustrated by videos of patients undergoing therapy to address neuromuscular deficiencies.

Robert Horst is the founder and VP of R&D at Tibion Corp. He has over ten years of experience designing products for robotic therapy and mobility enhancement. Bob has over 30 years of experience in electronics, systems architecture and fault-tolerant computing from his tenure at Hewlett Packard, Tandem Computers, Compaq, 3ware, and Network Appliance.

As a consultant, he has worked with several startup companies and served as an expert witness in patent litigation. Dr. Horst is an IEEE Fellow and currently holds 73 US patents. He received a BSEE from Bradley University, an MSEE from the Univ. of Illinois and a Ph.D in Computer Science from the Univ. of Illinois.
The most effective job search and career growth strategy is networking. This is how you tap into the hidden job market, get considered for openings that few know about, and get your résumé to the top of the pile.

Unfortunately, many professionals don’t know how to do it effectively. They mistake attending group networking events for ‘real’ networking, and make common mistakes of presentation that set back what efforts they do make.

In this workshop, John Hadley shows you the do’s and don’ts of effective career networking. He will share specific techniques and strategies that he has taught his own clients to land the jobs and pay they deserve. He has applied these same methods to build 2 successful independent practices, and you will walk away equipped with new skills and confidence to network into that hidden job market.

**John Hadley** helps job seekers who are frustrated with their search. He also works with professionals struggling to achieve the visibility that leads to new opportunities at work. After graduating from Stanford University, John worked in the financial services industry for 25 years, in roles ranging from Product Manager to Chief Actuary. He then opened a successful systems consulting practice, which generated over $1.5 million in revenues. 7 years ago he started his Career Search Counseling business, and has helped hundreds of clients land the job and pay they deserve.

John offers a FREE monthly Career Tips Email newsletter read by over 8,000, each month bringing valuable advice on marketing yourself for a career search, or for accelerating your career. You can find that and a variety of other career resources on his website at www.JHACareers.com.
All You Need to Know About Lead-Acid Batteries

Speaker:  John Kim, Director, Energy & Infrastructure, C&D University
Time: Social at 5:30 PM; Dinner at 6:00 PM; Presentation 7:00 PM
Cost: IEEE Members $25.00; Non Members $30.00; Students $10.00
Place: Biltmore Hotel, 2151 Laurelwood Rd, Santa Clara
RSVP: By email to Fred Jones, frederick.m.jones@nasa.gov or telephone (650) 604-2521
Info: www.ewh.ieee.org/r6/scv/pes_ias

This presentation will focus on battery basics, sizing, maintenance, and operations. It will describe battery selection choices to include factors such as; gassing, capacity testing, alloy choices, jar materials, acid specific gravities, and standby versus cycling batteries. The presentation will also cover important maintenance issues in order to properly operate battery systems and to extend battery reliability and life.

John Kim, Director, Energy & Infrastructure / C&D University, received his BS in Materials Engineering and MS in Engineering Management from Drexel University. He has been employed by C&D Technologies for 19 years. His current assignment is as a technical trainer for corporation-wide technical battery training program as well as being responsible for the Utility market in the US and Canada. John has served as R&D engineer, Manufacturing engineer, Product Manager, and Manager of Technical Support. He authored several papers and presented at numerous industry related seminars and conferences in his over 25 years in the battery industry.
The presentation gives an overview of the Vertical Motion Simulator at NASA Ames Research Center. It will provide a brief history, cover design and development of, as well as the various multidisciplinary contributions made by the Vertical Motion Simulator in the fields of human pilot cueing modalities and simulation fidelity, aircraft/spacecraft handling qualities and flight control design, and pilot-vehicle interface design.

Bimal Aponso is currently Chief of the Aerospace Simulation Research and Development Branch (SimLabs) at NASA Ames Research Center, Moffett Field. SimLabs includes the Vertical Motion Simulator (VMS), Crew Vehicle System Research Facility (CVSRF) and Future Flight Central (FFC) simulation facilities. Bimal has over 25 years of research and development experience in the areas of vehicle dynamics modeling and analysis, simulation, stability and control, and handling qualities. He has a BS in Mechanical Engineering from the University of Manchester, UK, and an MS in Aerospace Engineering from the University of Maryland. He also has an MBA from the University of Southern California.
An Autonomous Implantable System with Locomotion

Speaker: Daniel Pivonka, Center for Circuit and System Solutions, Stanford University
Time: Optional dinner at 6:15 PM; Presentation at 7:30 PM
Cost: none
Place: Optional dinner at Stanford Hospital Cafeteria (no host, no reservations); Meeting at Room M-114, Stanford University Medical School
RSVP: not required
Info: www.ewh.ieee.org/r6/scv/embs

Daniel Pivonka is currently working on a PhD in electrical engineering at Stanford University, with his research focusing on miniaturized implantable systems. He received his Bachelor's degree from Harvey Mudd College in 2007 and his MS degree from Stanford in 2009. He is a recipient of the Clay/Wolkin Fellowship, the Stanford Graduate Fellowship, and is a member of C2S2, the Center for Circuit and System Solutions.

Fully autonomous implantable systems with locomotion can revolutionize medical technology, and include applications ranging from diagnostics to minimally invasive surgery. However, the extreme power requirements of fluid locomotion impose significant design challenges. For mm-sized antennas in tissue, the optimal frequency for power transfer efficiency is in the low-GHz range. Combining this power transfer method with a highly efficient electromagnetic fluid micro-propulsion system, remotely controlled sub-mm implants become possible. This work focuses on the development of this propulsion system and its implementation on a real device. There are two proposed propulsion methods: the first is based on magneto hydrodynamic (MHD) propulsion, and the second relies on asymmetrical fluid drag forces on an oscillating structure. Analysis and simulation predict that speeds ~cm/s can be achieved with around 100µW, suggesting that this propulsion method is about 10 times more efficient than existing mechanical techniques.
Quality: On the Road to Performance Excellence

Speakers: over 20 talks in 5 tracks
Time: Registration at 7:30 AM; Seminar from 8:30 AM - 5:00 PM; Reception/talk in evening
Cost: $120 members, $145 non-members (thru Aug 31); afterwards: $150/$180
Place: Techmart, 5201 Great America Parkway, Santa Clara
RSVP: from website
Info: www.asq-silicon-valley.org/quality-conference

The Conference will again be held at Santa Clara’s Techmart on October 21, 2011. This year’s theme is "On the Road to Performance Excellence."

We have gathered together well known experts from around the country to provide attendees with insights into the key aspects and trends within the world of Quality to help them and their company achieve performance excellence.

The keynote speakers are:
Dr. Thomas Little
Dr. H. James Harrington

There are five topic tracks:
Statistics and Reliability
Biomedical and Pharmaceutical
Supplier Management and Outsourcing
Quality Management System Tools
Emerging Industries and Technologies

Schedule
7:30-8:30 Registration, Raffle Tickets, Continental Breakfast (Coffee, Tea, Bagels, etc.)
8:30-8:35 Opening Welcome: Conference Co-chair Ms. Christina DeLeon
8:50-9:45 Break-out Session 1
10:00-11:00 Morning Keynote:
Achieving Performance Excellence in Every Product and Process
Introduction by Section Chair Doug Chapman;
Keynote Speaker: Dr. Thomas A. Little, President Thomas A. Little Consulting
11:10-12:00 Break-out Session 2
12:00-1:30 Lunch Buffet
12:15-12:45 (Optional) Employment Session: Ms. Joan Cheng
12:15-12:45 (Learning Lunch) Project Selection; Picking Winners: Mr. Ed Russell
1:30-2:30 Break-out Session 3
2:40-3:40 Break-out Session 4
4:00-5:00 Afternoon Keynote
The Five Pillars of Organizational Excellence
Introduction by Program Chair Dr. John J. Flaig
Keynote speaker: Dr. H. James Harrington, CEO The Harrington Institute
Keynote speaker: Mr. Chuck Mignosa, Owner, President & Principal Consultant at Business Systems Architects LLC
5:00-5:05 Announce collection of conference evaluations at 5:30 (Mr. Sid Dutta)
5:05-5:30 Recognize Volunteers & Sponsors:
Conference Co-chair Mr. Sid Dutta
5:30-5:40 Collect Conference Evaluation forms and distribute Raffle tickets
5:40-5:50 Raffle
5:50-6:30 Presentation “Making Quality Magical” by Mr. Chuck Mignosa
6:30-7:30 Networking Mixer (music, snacks, open bar, one drink on US)

See website to download details for presentations.
IEEE Spectrum and the IEEE Santa Clara Valley Section presents the second of this year’s series of emerging technology forums on technology invented in Silicon Valley that offers new business opportunities and growth for Silicon Valley companies and EE’s.

On Monday October 24th, expert panelists representing industry & research will discuss the new generation of innovations that are building out the new high speed rail projects around the world. The scale of transformation, the number of people involved, and the huge number of applications forced to consolidate to build out new rail infrastructure worldwide makes this an exciting topic for Bay Area IEEE Members.

This is a live event with a maximum attendance of 350 people so sign up now to attend! For IEEE members who cannot attend in person this event will be available on demand by October 31st.

**Program Moderator:** Glenn Zorpette, IEEE Spectrum Executive Editor

**Intro & Overview:**
Dr. James Irvine, Reader - University of Strathclyde leading Mobile; Communications Group, Past President IEEE Vehicular Technology Society

**Industry Perspective:**
Keith Dierkx, Director of Global Rail Innovation Center, IBM
Armin Kick, Director of Business Development, High Speed Rail, Siemens
Geetha Dabir, Director of Engineering, Cisco PSBU

**Q&A session**

Wine & Cheese reception sponsored by ANSYS
The Anatomy of Wearable Computing

Speaker: Ted Ladd, Director of Developer Relations, WIMM Labs
Time: Networking and pizza at 6:30 PM; Presentation at 7:00 PM
Cost: $5 for IEEE Members, $10 for non-members (pay at door)
Place: NVIDIA, Building E, 2800 Scott Blvd., Santa Clara
RSVP: from website
Web: www.ieee.org/scvce

Ted Ladd is the Platform Evangelist and Director of Developer Relations at WIMM Labs, which makes hardware, software, and web services to provide people with immediate, subtle glances of relevant information in ultra-portable form factors. He had been the first platform evangelist at Palm, introducing mass market mobile devices to consumer brands.

WIMM Labs is a Silicon Valley-based company that offers an innovative platform to enable a new class of personal devices that deliver information at a glance and a touch. The WIMM Platform, the company's platform for connected wearable devices, is licensable to brands in the mobile, sports, finance, consumer electronics and many other industries.

WIMM Labs has attracted a remarkable team of perpetual innovators, strategic thinkers and those that extract every last drop of execution excellence from any endeavor. Our management team members include former executives from Intel, Rambus, Palm, Apple, Zing/Dell, Netflix/Roku, Nuance and Pogo/EA. Their experience, intelligence and imagination have all converged in one place—WIMM Labs.

The WIMM Platform integrates hardware, app tools and web services into a highly scalable product development model. It can quickly take you from product incubation and testing to full-scale manufacturing and sales. And the product categories it's perfect for are endless: health, fitness, mobile payments, fashion, enterprise, travel, entertainment, communications and others.
Parallel power solutions have always offered the standby generation marketplace significant advantages. However, implementation of these solutions has been limited to mission critical applications and large kilowatt projects. This is largely due to the constraints in implementing traditional paralleling solutions. These constraints include: cost, space, issues of single source responsibility, and a significant level of complexity.

The first step in evaluating parallel generation options is to acknowledge the benefits gained by placing multiple power sources in parallel. Through these steps, paralleled power solutions can be designed to compete effectively against single engine/generator price points while maintaining parallel generation benefits.

Curt Gibson is Power Solutions Manager supporting dealers and consulting engineers on their large complex emergency power projects. Curt has designed and managed over one hundred traditional paralleling switchgear systems while working for ASCO Power Technologies in various engineering and project management roles for 15 years. Prior positions include Facility Manager for Sun Microsystems, and Plant Engineering Manager for BP Chemicals. Curt is a PE, has an MBA, and is a licensed pilot.
Since the 2005 commercial introduction of perpendicular magnetic recording in hard disk drives, the recording areal density has increased by a factor of 5 and it is likely to reach a factor of 10 on current technology extension before new paradigms need to be invoked. From the media perspective, significant structural evolution took place to enable such areal density growth. Surprisingly, however, most of this growth has occurred with little change in the media grain size. This loss of scaling in such an important media feature cannot continue much further and imparts great pressure for developing new materials and processes to address obvious shortcomings. Similar to the grain size example, scaling of all other media features require much needed innovation. In this talk, we will discuss some of the most relevant evolutionary changes in PMR media, the short-term challenges required for extending current technology and new challenges associated with future technology candidates such as energy assisted recording and bit patterned media.
Body Area Network (BAN) devices operate in close vicinity to, on, or inside body and can enable a wide range of applications, including medical support, healthcare monitoring and consumer electronics with increased convenience or comfort. Due to strong demands of medical, healthcare and information technology industries, IEEE was requested to standardize the Body Area Network. IEEE 802.15 task group 6 (TG6) was set up to develop an IEEE international standard for BAN in January 2008. This talk reviews major issues, history and current status of TG6. Early on, the TG6 invited representatives from industry to present applications which require body area networks. We then developed an application matrix, and summarized it into a single document, which was issued to proposers. The proposers were asked to propose a communication protocol that would accommodate this application summary document. The other issue facing TG6 was to have a detail understanding of available spectrum for BANs. And finally we needed at an accurate model of the channel; in this case the human body. This channel is much more difficult than free space/air to measure and to correctly model. The draft of the standard is in Sponsor Ballot stage and is being worked on by the team. We expect comments resolution in the next IEEE 802 meeting and completion of the standard in 2012.

Arthur W. Astrin received the Ph.D. E.E. from U.C.L.A. in Communication Engineering in 1984 and MA in Mathematics from U.C. San Diego. He has worked for Apple Computer, Inc., IBM, Siemens, ROLM, Memorex and Citicorp. At Apple, he assisted in birthing the Wi-Fi industry, delivering the first consumer-oriented, wireless solution to the PC industry – AirPort – as well as industry compatibility with the Wi-Fi testing compliance with IEEE 802.11 standard. He also has been a professor at SJSU and UC Berkeley, teaching communication and computer engineering. He is Chair of the IEEE Information Theory Group in Santa Clara, a recipient of the IEEE Third Millennium Medal and a Senior Member of IEEE. Dr. Astrin is the 2011 recipient of IEEE Hans Karlsson Award. He currently chairs the Body Area Network Task Group 6 of IEEE 802.15.
Top Strategies for Cashing in on Asia's Innovation Boom

Speaker: Rebecca A. Fannin, author of Silicon Dragon and Startup Asia

Time: Registration at 11:30 AM; Buffet lunch at 11:45 AM; Presentation at 12:15 PM

Cost: $15 if reserved by Oct. 25; $5 for fulltime students and currently unemployed; $5 more at door

Place: Biltmore Hotel, 2151 Laurelwood Rd (Fwy 101 at Montague Expressway), Santa Clara

RSVP: from website

Info: www.cpmt.org/scv/meetings/cpmt1110l.html

Rebecca A. Fannin is the author of Silicon Dragon (2008) and Startup Asia (Oct. 2011). Her group, Silicon Asia, publishes newsletters for venture capitalists and entrepreneurs, develops programs for startups in China, India, Singapore, New York and Silicon Valley, and consults with several financial and digital media companies.

A journalist covering global business for two decades, Rebecca is a contributor to Forbes, where she writes a weekly online column. She has served as an international editor at Red Herring, the Pulitzer-owned International Business, AdAge, and the Hong Kong-based publishing group Incisive Media. Her articles have appeared in CEO, Inc., Worth, Fast Company, The Deal and Harvard Business Review.

Rebecca’s consulting work includes a special report for KPMG on the rise of China outsourcing and digital trends reports for Sony Ericsson. Ms. Fannin has testified as an expert witness on China’s Internet before a U.S.-China Commission in Washington, DC.

A commentator on Fox Business News, Sky TV in Australia and CCTV in China, Rebecca also has spoken at the Asia Society, World Affairs Council, Vancouver Board of Trade, Chamber of Commerce, Asian American Multi-Technology Association, Singapore Institute of Management, Harvard Club and the China Investment Group, among others. She has lectured at the National University of Singapore, Tsinghua University, Hong Kong University, the Hong Kong Science & Technology University, Ohio University and the University of Toronto.

Rebecca resides in New York City and San Francisco, and enjoys frequent travels to Asia.

Rebecca will explain strategies in the following areas:

- **Geographies:** - China - India - Vietnam - plus Singapore, Taiwan
- **Market sectors:** - mobile - cleantech - consumer - outsourcing
- **Approaches:** - Tap into Incubators - Clone a Hit - Score a Breakthrough - Go IPO - Go Global
Key Considerations in Application of Current Transformers in Protective Relaying Systems

Speaker: Normann Fischer, Schweitzer Engineering Laboratories, Inc.

Time: No-host social at 5:30 PM; Presentation at 6:15 PM; Dinner at 7:15 PM; Presentation continues at 8:00 PM

Cost: $25 for IEEE members, $30 for non-members, $15 for student and retired members

Place: Zio Fraedos, 611 Gregory Lane, Pleasant Hill

RSVP: by October 24, by contacting Gregg Boltz, gboltz@brwncald.com or telephone (925) 210-2571

Info: www.e-grid.net/docs/1110-oeb-ias.pdf

Normann Fischer received a Higher Diploma in Technology, with honors, from Witwatersrand Technikon, Johannesburg in 1988, a BSEE, with honors, from the University of Cape Town in 1993, and an MSEE from the University of Idaho in 2005. He joined Eskom as a protection technician in 1984 and was a senior design engineer in the protection design department at Eskom for three years. He then joined IST Energy as a senior design engineer in 1996. In 1999, he joined Schweitzer Engineering Laboratories, Inc. as a power engineer in the research and development division. Normann was a registered professional engineer in South Africa and a member of the South Africa Institute of Electrical Engineers. He is currently a member of IEEE and ASEE.

Current transformers (CTs) are critically important components of medium voltage industrial protective relay systems. CT performance during fault conditions determines the quality of transformed current signal levels sensed by protective relays. Hence, overall protective system response to electrical faults is dependent on CT performance, as well as relay and breaker operating behavior. This presentation will include a discussion on:

- What is CT saturation, why do we care, and how do we avoid and/or minimize it?
- How do electromechanical, analog, and modern digital relays respond to a saturated CT output?
- How does CT performance affect medium voltage feeder overcurrent and differential protection systems?
- What are “CT burden calculations,” and why are they important?
- What are the tradeoffs between current transformer Class, Size, and Saturation?
Soft Error Rate (SER) Workshop

Speakers: (to be posted)
Time:  Registration and light lunch at 11:30 AM; Presentations from 12:00 PM - 5:00 PM
Cost:  none. Can attend on-site (limit of 40 people) or on the live webcast
Place:  Cisco Systems, Inc., 285 West Tasman Drive, San Jose, and on the Internet
RSVP:  from website
Web:  www.cpmt.org/scv/meetings/cpmt1110w.html

For speakers and talk titles, see the website. Talks from last year’s SER Workshop are available as webcasts, from the website.

The 3rd annual IEEE Santa Clara Valley SER workshop provides a unique forum for component manufacturers, assembly houses, and electronic system manufacturers to exchange innovative ideas and recent results on the measurement, monitoring, and control of alpha emission from packaging materials and manufacturing processes. Built on the success of our workshops held in 2009 and 2010, this year’s event will continue to cover a wide range of areas and subjects critical to the control of device soft error rates. Most talks have been selected; see the website for full program.

Topics to be covered:
• Techniques and approaches for alpha emissivity measurements
• Device soft error case studies (diagnosis and counter-measures)
• Other cases of Single Event Upset (SEU)
• Wafer processing induced alpha emission
• Assembly process control and monitor
• Success stories of alpha emission control

Tentative Titles:
• “Flip Chip Packaging Materials: Alpha Characterization and Challenges”
• “Soft Error Effects of Designs Programmed on FPGAs”
• “Alpha Emission measurement by Gamma Ray Spectrometry”
• “Correlation of Life Testing to Accelerated Soft Error Testing”
• “Calibration of Alpha Sciences Proportional Counters”
Current Status and Future Directions of Non-Volatile Memory Technology

Speakers: from Intel, Micron, Ovonyx, HP, Arizona State University and more

Time: 1:00 PM - 5:00 PM
Cost: $30 for IEEE Members, $60 for non-members, $15 for IEEE Student Members, $30 for students
Place: National Semiconductor, Building E1, Conference Center, 2900 Semiconductor Drive, Santa Clara
RSVP: from the website
Web: www.ewh.ieee.org/r6/scv/eds

Speakers:
- Dr. Gurtej Sandhu, Micron
- Dr. Al Fazio, Intel
- Dr. Chuck Dennison, Ovonyx
- Professor Michael Kozicki, Arizona State University
- Dr. Joshua Yang and Dr. Stan Williams, HP Laboratories
LIFE (Laser Inertial Fusion Energy) is an advanced energy concept under development at Lawrence Livermore National Laboratory. Based on physics and technology developed for the National Ignition Facility, a LIFE power plant has the potential to meet future worldwide energy needs in a safe, sustainable manner without harmful emissions to the atmosphere.

The National Ignition Facility (NIF) is the world's largest and most energetic laser. The goal of the facility is to achieve controlled nuclear fusion and energy gain in the laboratory for the first time — in essence, creating a miniature star on Earth. NIF's 192 giant lasers, housed in a ten-story building the size of three football fields, will deliver at least 60 times more energy than any previous laser system. NIF will focus more than one million joules of ultraviolet laser energy on a tiny target in the center of its target chamber — creating conditions similar to those that exist only in the cores of stars and giant planets and inside a nuclear weapon. The resulting fusion reaction will release many times more energy than the laser energy required to initiate the reaction.

It is widely recognized that fusion energy provides a highly attractive solution to society's demand for safe, secure, environmentally sustainable energy — at a scale that meets our long-term needs. This presentation will present the LIFE approach to achieving this goal.

Dr. Edward Moses is the director for the National Ignition Facility (NIF) and the principal associate director for the NIF and Photon Science organization at Lawrence Livermore National Laboratory (LLNL). He has 20 years of experience developing Department of Energy/National Nuclear Security Administration laser systems and 30 years of experience developing and managing complex laser systems and high-technology projects. He received his B.S. and Ph.D. from Cornell University. Dr. Moses joined LLNL in 1980. He has served as leader of the Atomic Vapor Laser Isotope Separation, senior vice president of Advanced Technology Applications, and program leader for the development of Peregrine, an advanced Monte Carlo technique for cancer treatment. First as project manager for NIF and then as principal associate director for the NIF and Photon Science Directorate at LLNL, he has been responsible for completing construction and bringing NIF into full operation. Dr. Moses is also the program director for the National Ignition Campaign, an effort aimed at achieving ignition in the laboratory for the first time. He holds patents in laser technology, inertial fusion energy, and computational physics and has received many honors, including the Jefferson Award for Public Service.
Expectations for 2011 began with modest growth forecasts, generally in the range of 5% to 10% growth for semiconductor revenues. By the third quarter, however, the industry began to show signs of slowing due to broader economic concerns. The presentation will provide latest data for semiconductor industry spending on equipment and materials. Included in the discussion will be an update on projected spending for new and upgraded fabs in 2012. Highlights will also cover investments related to the LED and PV manufacturing sectors.

Daniel Tracy is the senior director of Industry Research & Statistics for Semiconductor Equipment and Materials International (SEMI). Prior to joining SEMI, Dr. Tracy was a Research Associate with Rose Associates and worked at National Semiconductor’s Package Technology Group. Dr. Tracy has a Ph.D. in Materials Engineering from Rensselaer Polytechnic Institute.
A new energy paradigm, consisting of greater reliance on renewable energy sources and increased concern for energy efficiency in the total energy lifecycle, has accelerated research in energy-related technologies. Due to their ubiquity, magnetic materials play an important role in improving the efficiency and performance of devices in electric power generation, conversion and transportation. Magnetic materials are essential components of energy applications (i.e. motors, generators, transformers, actuators, etc.) and improvements in magnetic materials will have significant impact in this area, on par with many “hot” energy materials efforts (e.g. hydrogen storage, batteries, thermoelectrics, etc.).

The lecture focuses on the state-of-the-art hard and soft magnets and magnetocaloric materials with an emphasis on their optimization for energy applications. Specifically, the impact of hard magnets on electric motor and transportation technologies, of soft magnetic materials on electricity generation and conversion technologies, and of magnetocaloric materials for refrigeration technologies, will be discussed.

The synthesis, characterization, and property evaluation of the materials, with an emphasis on structure-property relationships, will be examined in the context of their respective markets as well as their potential impact on energy efficiency.

Finally, considering future bottle-necks in raw materials and in the supply chain, options for recycling of rare-earth metals will be analysed.
Half Day Symposium - Nanophotonics and Imaging

Speakers: from Leti, UC-Berkeley, Gigaphoton, NIST, Yole Development

Time: light lunch at 12:00 PM; Presentations from 1:00 PM - 5:00 PM

Cost: IEEE Members & Students $25; Non-Members $30 ($5 more, at door)

Place: National Semiconductor Auditorium E-1, 2900 Semiconductor Drive, Santa Clara

RSVP: from the website

Web: www.ieee.org/nano

12:00 – 1:00pm Registration & Light Lunch
1:00 Welcome: Allen Amaro, 2011 Chair, IEEE SFBA Nanotechnology Council & Session Chair = Jeffrey Perkins, President, Yole Development

1:10 "Nanophotonics communications & SOC/3D interconnect" - Dr. Hughes Metras – Dir. North America, Leti

1:50 "Life beyond the diffraction limit: nano-scale imaging and lasers" - Dr. Xiang Zhang, Ernest S. Kuh Endowed Chair, UC Berkeley

2:40 "New Light at the End of the EUV Tunnel" - Dr. Hakaru Mizoguchi, CTO, Gigaphoton

3:20 "Metrology and Standards for NanoMaterials" - Dr. Herbert Bennett – NIST Fellow & Executive Advisor, NIST

4:10 Panel – Challenges & Breakthroughs in Photonics
Moderator: Jeffery Perkins, President, Yole Development
Panelists: Dr. Hughes Metras – Leti
Dr. Xiang Zhang – UC Berkeley
Dr. Hakaru Mizoguchi - Gigaphoton
Dr. Herbert Bennett – NIST

4:50 Wrap-up/Closing Remarks
The presentation gives an overview of various control applications in a modern variable speed electrical power generation wind turbine. The presentation will start with an introduction of various types of turbine and turbine dynamics. Control applications in wind turbines include yaw control, turbine speed control, generator torque control, blade pitch control, control of doubly-fed induction generator, control of power for grid connection and structure vibration damping control.

Prof. Ping Hsu graduated from the University of California, Berkeley in 1988 with a Ph.D. in Electrical Engineering. He joined San Jose State University in 1990 and is currently a faculty member in the Electrical Engineering Department. His research interests include nonlinear control, generator and motor control, power electronics, and power systems. Prof. Hsu was involved in the control software development for a variable speed wind turbine starting in 1997. The work resulted in a commercial generator control system that is used in thousands of commercially manufactured 750 kW and 1.5 MW turbines. Prof. Hsu has been collaborating with wind turbine and power electronics equipment manufacturers in the area of system analysis and development.
Feedback Communication Systems: Fundamental Limits and Control-Theoretic Approach

Speaker: Ehsan Ardestanizadeh, PhD, ASSIA, Inc.
Time: Refreshments at 5:30 PM; Presentation at 6:00 PM
Cost: none
Place: 202 Packard Bldg, Stanford University, Stanford
RSVP: not required
Info: ewh.ieee.org/r6/scv/it

We combine techniques from information theory, estimation and control, and optimization theory to investigate the benefits of feedback in improving fundamental limits on information flow in communication networks. We focus on three network models. First, combining the Lagrange duality technique and tools from information theory including the dependence balance bound, we derive an upper bound on the sum rate achievable by linear codes for the k-sender Gaussian multiple access channel with feedback. This upper bound is further shown to coincide with the known lower bound by Kramer, hence establishing the linear sum capacity. Next, we study the application of tools from classic linear quadratic Gaussian (LQG) control in designing codes for feedback communications. For the k-receiver Gaussian broadcast channel with feedback, we construct a linear code based on a mapping to the LQG control problem, which achieves the best known lower bound on the sum rate. In addition, depending on the correlation among the receivers' noises, it is shown that in the high signal-to-noise ratio regime this code can achieve k degrees of freedom, i.e., the sum rate increases linearly with the number of receivers. Finally, we consider the wiretap channel with rate-limited feedback and discuss the benefits of feedback in improving the secrecy capacity.