



CHAPTER MEETINGS

- SCV-PACE - 12/1 | **Upgrade to Senior Member of IEEE** - bring resume and application, we provide references ... [\[more\]](#)
- SCV-CE - 12/2 | **Navigating the Murky Waters of Home Networking: HomeGrid, G.hn** - SoC, multi streams, HD video, coverage... [\[more\]](#)
- MontereyBay+CS - 12/3 | **AMD's Stream Computing Platform: From the Hardware to the Software** - GPUs, modeling, simulation ... [\[more\]](#)
- EnCorps - 12/3 | **Public School Teaching -- Your Next Career** - Calif state program to train retiring engineers to be teachers ... [\[more\]](#)
- SPECTRUM - 12/4 | **Mobile WiMAX -- Ready to Rumble** - chip suppliers, test gear, evolving mobile devices, low-cost laptops ... [\[more\]](#)
- SCV-TMC - 12/4 | **SWOT Analysis: Examination Tool for Business or Career** - h strategy, opportunities, allocating resources ... [\[more\]](#)
- SCV-SPS - 12/8 | **Exploiting Real World Channels for Increased Capacity** - MIMO processing, channels, link budgets ... [\[more\]](#)
- SCV-CNSV - 12/9 | **Getting Paid / Annual Meeting** - shared expectations, disagreements, late payments, serious steps ... [\[more\]](#)
- SCV-EMC - 12/9 | **WiMAX and White Spaces: What the EMC Engineer Needs to Know for 2009 and Beyond** - approaches ... [\[more\]](#)
- SCV-CPMT+PSES - 12/10 | **Halogen Free Electronics** - their functions, removal, basic legislation, trade-offs ... [\[more\]](#)
- SPECTRUM - 12/11 | **Webinar: Facing Today's Signal Integrity Challenges** - permittivity, roughness, time/freq domains ... [\[more\]](#)
- OEB-Mag - 12/12 | **Patterned Nanoscale Magnetic Field Sources** - patterned wires, trapping biological cells, laser-cooled atoms ... [\[more\]](#)
- SCV-SSC - 12/12 | **Future Directions in Mixed-Signal Circuit Design** - data converters, MEMS/bio-medical apps, organic electronics ... [\[more\]](#)
- SCV-LEOS - 12/12 | **Laser Show at De Anza College Fujitsu Planetarium** - an annual holiday event for the whole family ... [\[more\]](#)
- SCV-GOLD - 12/12 | **Holiday Social: Potluck Party & E-game Networking** - gamer skilz, platforms, games (BYO) ... [\[more\]](#)
- SCV-Nano - 12/16 | **Large-Scale Combustion Manufacture of Fullerenes and Single-Walled Carbon Nanotubes** - scalable ... [\[more\]](#)
- SF-ComSoc - 12/17 | **SF ComSoc Holiday Party** - hors d'oeuvres, refreshments share ideas for 2009 ... [\[more\]](#)
- SCV-CI - 12/18 | **Advances in Cognitive Memory and its Applications** - memory, recognition, sensory inputs, applications ... [\[more\]](#)
- SCV-CPMT+LEOS - 1/14 | **Microscope on a Chip: A Highly Compact Lensless High-Resolution Optofluidic Microscope (OFM)** ... [\[more\]](#)
- SCV-CNSV - 1/20 | **Consultants' Forum #3: Marketing Plans** - white papers, user communities, website, expert witness ... [\[more\]](#)
- SCV-CPMT - 1/22 | **Trends in IC Packaging and Multicomponent Packaging** - five-year forecast, BGA, WLP, SiP, 3D, TSV ... [\[more\]](#)
- SF-IAS - 1/27 | **Energy Savings Programs - A Practical Approach to Implementation** - opportunities, tools to monitor, measure ... [\[more\]](#)

Conference Calendar

- Dec 2-5: **Printed Electronics USA Conference and Exhibition** - - San Jose Convention Center [\[more\]](#)
- Dec 9-11: **FPGA Summit and Exhibition**
Save \$100 – use Registration Code "IEEE"
- Wyndham Hotel, San Jose [\[more\]](#)
- Dec 11: **What's in Store For Storage: The Future of Non-Volatile Technologies**
- Embassy Suites Hotel, Milpitas [\[more\]](#)
- Dec 15-17: **IEEE International Electron Devices Meeting** - Hilton Hotel, San Francisco [\[more\]](#)
- Jan 10-13: **CCNC – Consumer Communications and Networking Conference** Las Vegas, NV [\[more\]](#)
- Feb 18-20: **CMOS Emerging Technologies Workshop** - - Banff, Alberta, Canada [\[more\]](#)

Professional Skills Courses [\[more\]](#)

- Managing Time & Multiple Priorities - Comm'n and Conflict Management - Business, Technical, and E-Mail Writing - Transitioning from Individual Contributor to Manager - Breakthrough Project Management

Santa Clara Univ Winter Quarter [\[more\]](#)

The Graduate Engineering **Open University** program is a quick and easy way to enroll in our graduate-level classes. Early morning courses; Evening courses; Saturday courses. **Classes start January 5**

UCSC-Extension in Sunnyvale, Cupertino [\[more\]](#)

- Storage Networking Design and Architecture - Intro to Parallel and Concurrent Programming - Advanced Digital Signal and Image Processing - Embedded System-on-Chip Design Using Verilog and more

SVTI Technical Skills Courses/Seminars [\[more\]](#)

- Design of RFICs - MATLAB for Engineering App'ns - Practical Design with DSPs - ESD Design for Mixed Signal and RF ICs - Carbon Nanotube & Nanowire Technology and Applications and more

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page 3

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IEEE **GRID** is the monthly newsmagazine of the San Francisco Bay Area Council of the Institute of Electrical and Electronics Engineers, Inc. As a medium for news for technologists, managers and professors, the editorial objectives of IEEE **GRID** are to inform readers of newsworthy IEEE activities sponsored by local IEEE units (Chapters, Affinity Groups) taking place in and around the Bay Area; to publicize locally sponsored conferences and seminars; to publish paid advertising for conferences, workshops, symposia and classes coming to the Bay Area; and advertise services provided by local firms and entrepreneurs.

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From the Editor's Desk ...

I once again find myself on a visit to the eastern side of the Sierra, where snow has just blanketed the upper reaches of the mountains (see photo on page 1). Black Friday sales are going on at stores throughout the area, and also on the Internet. This holiday season is less predictable than earlier ones because of the poor economic news.

I'm aware of engineers who have been caught in the downdraft, and are currently looking for positions locally. Although some companies are hiring – most new jobs are created at small companies – many are waiting to see how business develops over the next months.

If you are currently employed – and especially if you are not – it is critically important to keep abreast of new developments and tools in your field, and also activities in adjacent fields where new jobs (and careers) are developing. If/when you find yourself interviewing for a new position, you may be competing with those with more-current skillsets, abilities, and practical experience. Again, the IEEE can help – through free webcasts, the technical meetings organized by local Chapters (to learn from experts and explore novel areas), and from low-cost seminars and short courses organized locally.

Two specific local IEEE series come to mind. The Consultants' Network of Silicon Valley (CNSV) has its second free evening meeting on **basic consulting skills** – this one on getting paid; in January it will be on marketing plans. And the Monterey Bay Subsection will have the second in its series on **Cheap Supercomputing** – harnessing the power of graphics processors (GPUs) for large computational tasks. So, yet another opportunity to master new topical areas ahead of a possible need to redirect a career!

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



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IEEE-CNSV

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IEEE Senior Member Grade Elevation Night

Date: Monday, December 1, 2008

Time: 6:30 – 9:00 PM (drop in at any time between 6:30 PM and 8:30 PM)

Location: Cogswell Polytechnical College, Executive Board Room

1175 Bordeaux Drive, Sunnyvale, CA 94089

Refreshments will be provided

The IEEE Santa Clara Valley Section, in conjunction with PACE, is sponsoring a **Senior Member Grade Elevation night** for all IEEE members who meet the requirements for grade elevation to Senior Member. The requirements are posted at

www.ieee.org/web/membership/senior-members

Summary:

- * be an engineer, scientist, educator, technical executive, or originator in IEEE-designated fields;
- * have been **in professional practice** for:
 - **7 years** if you hold a baccalaureate degree in an IEEE-designated field;
 - **6 years** if you hold a baccalaureate and a masters degree;
 - **5 years** if you hold a doctorate
- * show professional maturity and "significant performance" over a period of at least five of those years in professional practice.

IEEE members who meet these requirements are **encouraged to attend**. Potential Senior Members will have an opportunity to **meet with Senior Members** and possibly obtain Senior Member/Fellow references that are required for the application.

Members must bring 4 hard copies of the completed Senior Member Application Form found at

www.ieee.org/web/membership/senior-members/application.html

-- Print out, fill in the information, and bring 4 copies; *we'll* add the References!

Also members are asked to **write a few sentences** on Page 2 of the Application, explaining how they have significantly performed their professional duties for at least five years. However, please remember that the process is exploratory and references are not guaranteed.

For any questions please send email to Mark Hooper m.hooper@ieee.org

Become a Senior Member -- See you there!

UCSC Extension offers practical engineering courses in Silicon Valley and online to help hardware, software and IT professionals develop and advance their skills. We are the largest professional engineering educator in Silicon Valley.

Storage Networking Design and Architecture

Jan 21 – Mar 5, Wed, 6:30PM-9:30PM, Cpto Campus
Earlybird rate through January 7 – save 10%

DFT Concepts for ASIC Designs, Applications

Jan 21 - Mar 25, Mon- Wed 6:30-9:30PM, Cpto Campus
Earlybird rate through January 7 – save 10%

Parallel and Concurrent Programming, Intro

Jan 22 - Apr 16, Thu 6:30PM to 9:30PM, , Cpto Campus
Earlybird rate through January 8 – save 10%

Chip Design Flow from Netlist to GDS-II

Jan 23 - Apr 3, Fri 6:00PM-9:00PM, Cpto Campus
Earlybird rate through January 9 – save 10%

Our courses are organized by Certificate Programs. Within a program you will find courses from the basics (for career changers) to the cutting-edge (to help you stay at the forefront of the profession).

Digital Signal Processing and Image Processing

Jan 24 – Feb 7, Sat 9:00AM-5:00PM, Cpto Campus
Earlybird rate through January 10 – save 10%

Developing Rich Internet Apps with Flex and Java

Jan 24 – Feb 7, Sat 9:00AM-5:00PM, Cpto Campus
Earlybird rate through January 10 – save 10%

Computer, Network & Internet Security Fundamentals

Jan 24 – Feb 28, Sat 9:00AM-4:00PM, Cpto Campus
Earlybird rate through January 10 – save 10%

Embedded System-on-Chip Design Using Verilog

Jan 24 – Apr 4, Sat 9:30AM-12:30PM, Cpto Campus
Earlybird rate through January 10 – save 10%

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with year-round Course Tables.

www.ucsc-extension.edu/EngTech

2009 Banff Winter Workshop

CMOS Emerging Technologies Workshop

Theme: Research & Business Opportunities Ahead

February 18-20, 2009

Banff, Alberta, Canada

CMOS ↑
Emerging Technologies

The CMOS Emerging Technologies Workshop is a research and business event for those who want to discuss and discover new and exciting high tech opportunities. The format of the talks resembles in-depth tutorials describing state-of-the-art technology and future research directions rather than presenting specific research results or commercial products. The 5th annual workshop will be held in Banff, with numerous opportunities for personal exploration of surrounding tourist attractions, including world renowned skiing.

Key Talks:

Jan Rabaey, UC-Berkeley, **Microscopic Wireless to Power Brain-Machine Interfaces** Rahul Sarpeshkar, MIT, **Bioelectronics** Glenn Gulak, UofToronto, **Rapid Identification of Bacteria in CMOS** Chris Van Hoof, IMEC, **Ultra-low-power Circuits and Systems for Vital Signs Monitoring** Tatsuo Nakagawa, Hitachi, **UWB-IR Transceiver for Simultaneous DataComm & Locationing**

Sessions/Papers: (*selected – see full Program on website*)

Bioelectronics: - Making CMOS Work with Bacteria
- Analog Wavelet Filters for Biomedical Signal Characterization

Wireless: - Very Short Reach Wireless Technologies - RF and mm-wave CMOS PAs - Mobile-TV: Emerging Tech.

Design Techniques: - Design Challenges in 32nm - Ultra Low Voltage Design - μ processor I/O Scaling Challenges

Nanotechnology: - Nanoelectronic Circuits - Biologically Inspired Computing - Printed Nanowire Arrays

Review the full program and register early!

www.CMOSet.com*





International Electron Devices Meeting

December 15-17, 2008 Hilton San Francisco

Over the last 54 years, the IEEE/IEDM has been the world's main forum for reporting breakthroughs in technology, design, manufacturing, physics and the modeling of semiconductors and other electronic devices. Topics range from deep submicron CMOS transistors and memories to novel displays and imagers, from compound semiconductor materials to nanotechnology devices and architectures, from micromachined devices to smart-power technologies, etc.

This is especially important given that as technology advances, the sophistication in the integration of different modules grows and a cross-disciplinary approach becomes even more necessary to continue to expand the critical value technology has provided to our global societies.

SHORT COURSES:

IEDM sponsors two short courses on Sunday, December 14, from 9 AM to 5:30 PM. The courses are "22nm CMOS Technology" and "More Than Moore: Technologies for Functional Diversification"

PLENARY PRESENTATIONS:

- **Electronic and Ionic Devices: Semiconductor Chips with Brain Tissue**
- **Non-Volatile Memory Technologies: the Quest for Ever Lower Cost**
- **PV Technology Trends and Industry's Role.**

MULTIPLE THEMES/TRACKS:

- CMOS Devices and Technology
- Displays, Sensors and MEMS
- Characterization, Reliability, and Yield
- Quantum, Power, and Compound Semiconductor Devices
- Solid State and Nanoelectronic Devices
- Memory Technology
- Process Technology
- Modeling and Simulation
- Emerging Technologies

Evening Panel Discussion:

"The Future of Fabs"

For more information, and to register:

www.ieee-iedm.org



December 9-11, 2008
Wyndham Hotel San Jose

FPGA Summit & Exhibition is dedicated exclusively to the increasingly popular hardware building blocks being used in communications, networking, automotive, military, aerospace, process and industrial control, computer, and consumer applications. FPGAs can replace processors and provide a fast, low-cost, simple solution. They can also serve as the basic elements in high-performance computing, offering a combination of high speed, low cost, and straightforward development.

"Think of an FPGA chip as 'liquid silicon' in which digital logic is downloaded to create processors, peripherals, buses, and glue logic."
— Eric Schneider, Eridon

Summit topics include efficient design of large devices, reducing costs and power consumption, providing security, managing verification and validation, implementing complex algorithms, replacing or supplementing general-purpose processors, DSPs, bridge chips, and much more.

Who Should Attend? • Hardware Design Engineers
• Embedded Systems Designers • Engineering Managers, VPs, and CTOs
• Computer Designers • Software Design Engineers
• Communications Design Engineers

Don't miss this important event!

Reduced Fees through December 3rd
Save \$100 – use Registration Code "IEEE"

Full information:

www.FPGAsummit.com

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The Graduate Engineering **Open University** program is a quick and easy way to enroll in our graduate-level classes. For those of you who might be seeking a degree, you can start with courses under this program and later transfer units into a degree program. You can examine a field of study, enhance your professional training, or get a head start by enrolling in classes while waiting for admission/transfer to a degree program. You may start in any quarter.

Prepare for that next project or assignment!

- Winter class registration begins **October 25**
- Classes start **January 5**



More Information:

www.scu.edu/engineering/graduate/emergingtopics/

[Open University Link](#)



December 2-5, 2008

San Jose Convention Center

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

The **fifth annual Printed Electronics USA** conference and exhibition covers all the applications, technologies and opportunities. Anticipating over 800 delegates and 80 exhibitors, this is the World's largest event on the topic.

Printed Electronics USA gives the big picture, not least by inviting leading speakers from across the world. Commercialization and the full range of technologies are the emphasis, with inorganic solutions receiving equal emphasis with organic and hybrid solutions – thus reflecting the situation in the real world.

A full range of devices, materials and production technologies will be explained by best-in-class speakers, with many first announcements. Samples and demonstrations will be available and many subjects will be aired for the first time.

There will be sessions on the latest breakthroughs in electronics on paper and on many new types, such as smart skin patches and photovoltaics beyond silicon.

Over 100 world class speakers - some presenting exclusively for the first time here - cover components, materials and applications in the following sessions:

- Analyst forecasts and trends
- Healthcare and bionic man
- Radical new printed electronic products
- Improving traditional electronics
- New possibilities with printed electronics
- Flexible lighting and its applications
- Thin film photovoltaics and batteries
- Sensors
- Smart substrates/stretchable electronics
- Materials
- Manufacture

The Exhibition (Dec 3-4)

Covering the world of organic and printed inorganic solutions: Companies exhibiting cover materials, manufacture, device production, consulting, academic research and more. 80 anticipated exhibitors will make this the largest exhibition on Printed Electronics in the world.

For more information, visit

www.IDTechEx.com/peUSA

"Empowering the Connected Consumer"

CCNC is a major annual international conference organized with the objective of bringing together researchers, developers, and practitioners from academia and industry working in all areas of consumer communications and networking. CCNC 2009 will present the latest developments and technical solutions in the areas of home networking, consumer networking, enabling technologies (such as middleware), and novel applications and services. The conference will include a peer-reviewed program of technical sessions, special sessions, business application sessions, tutorials, and demonstration sessions.

CCNC 2009 overlaps with the **2009 International Consumer Electronics Show (CES 2009)** giving participants the opportunity to attend both CCNC and CES!

Who should attend

- CCNC is designed to be engaging to professionals in the consumer networking, consumer electronics and consumer content-provider fields.
- Engineers will find the latest world-class technical results in our papers and special sessions.
- Marketing and Product design specialists will find great demonstrations of emerging technology and discussions of key issues in our panels.
- Executives will be very interested in the keynotes and business application panels presented by industry leaders.
- All can benefit from CCNC's tutorials on the latest hot issues in consumer networking technology.

Tutorials - One included with every Full Registration!

- Power Line Communication and the "Grand Unification" in the Wired Home Networking Industry
- Heterogeneous Network Mobility, Security, and TV Broadcast, with IEEE 802.21 and DVB
- Peer-to-Peer Networking: State of the Art and Research Challenges
- Remote Management of Consumer Devices
- Enabling Multi Gigabit Transmission at 60 GHz Technologies: Opportunities, Design, Challenges and Future Directions
- QoS Support in IEEE 802.16 PMP and Mesh - Capabilities, Advances, Consumer Devices Challenges, and Open Issues

Workshops

- Digital Rights Management (DRM)
- Social Systems Software
- Networking Issues in Multimedia Entertainment
- Ubiquitous Applications & Security Services (UASS)
- Social Television (STV)
- Personal Networks Digital Rights Management
- Dependable & Sustainable P2P Systems
- Information Retrieval in Sensor Networks

Attention Students!

Create a **YouTube Video** highlighting the CCNC Conference and win the chance to receive a free registration. Please submit video to Diane Williams at d.williams@comsoc.org by **December 5, 2008**.

Keynote Speakers

Dr. Youngky Kim, Executive VP, Samsung Electronics

Jim Battaglia, VP, Strategic Business Development, Panasonic R&D Center of America

Dr. Fred Kitson, Vice President - Applications Research, Motorola Technology, "Connected Entertainment Devices: Past, Present, and Future?"

Tracks/Sessions at this Year's CCNC

Wireless Networking for Consumer Electronics: Cognitive Radio Networks; Wireless Resource Allocation; Signal Processing for Communications

Ad Hoc and Sensor Networks: Routing and Protocols; Performance, Estimation, and Assessment; QoS and Service Discovery; Applications, Security, and Energy Efficiency

Entertainment and Multimedia Networking: Video Networking; Multimedia Comm'n; Scalable Adaptive Multicast in P2P Overlays; Architecture, Metrics and Protocols; RFID

P2P Networking and Content Delivery: Overlay Networks; Media Streaming; New Results; Incentive-based Content Delivery; Home Networks, Online Social Networks

Emerging Applications & Pervasive Technologies: Pervasive Computing and Networking; Applications; Positioning; Service-Oriented Wireless Ad Hoc and Sensor Networks

Security for CE Networking: Wireless Security; Privacy and System Security; Collaboration and Communication in Virtual Worlds; Virtualization for CE Devices; Challenges in Future Vehicular Ad Hoc Networks

Plus Special Sessions on Wireless Technologies for High-Speed Video/Audio/Gaming Entertainment Networks; IPTV Toward Seamless Infotainment; Beyond GPS - Where Navigation meets Consumer Communications

Demonstrations

Over 30 demos showcasing emerging and innovative technologies in the field of consumer communications and networking.

Earlybird registration rates through December 12.

Visit our website:

www.ieee-ccnc.org

IEEE Professional Skills Courses

SCV Chapters, Engineering Management & Components,
Packaging and Manufacturing Technology Societies

Transitioning from Individual Contributor to Manager

- Date/Time: Wed, Nov 5, 8:30AM – 4:30PM
- Location: – Synopsys, Mountain View
- Fall Discount Price: \$325 for IEEE Members

Being a manager demands a deeper appreciation of the impact of one's style and greater flexibility in order to be able to deal with a variety of people. This program is designed to introduce prospective or newly-promoted managers in a technical environment to the concepts and skills critical to a successful assumption of leadership.

Key Topics: - Balancing technical activity with management
- Manager payoffs - "Letting Go" of the old job - Identifying your "Operating Style" - Taking your value stands - The importance of delegation - Making powerful requests

"10 out of 10! This workshop is one of the most effective workshops I have ever been to."

-Engineer Project Lead, Cypress Semiconductor

Project Management: A Team Approach for Accountability and Results

- Date/Time: T-W, Nov 11-12, 8:30AM – 4:30PM
- Location: – LSI Corporation, Milpitas
- Fall Discount Price: \$550 for IEEE Members

Using a mix of presentation, group interaction, experiential exercises, and applying all the steps to your own projects, this powerful 2-day course gives you and your team the common framework, skills, methodology, and language to generate the accountability and superior results, and access to real data – not just opinions or "gut feelings" – that you can use in your interactions to negotiate and set expectations for results.

Improve your skills – register for one of these classes, or for others coming up this fall. Bring a team!

Budgeting Essentials

- Date/Time: Tues, Nov 11, 8:30AM – 12:30PM
- Location: – TIBCO Software, Palo Alto
- Fee: \$300 for IEEE Members; \$350 non-members

Clear Business, Technical and Email Writing

- Date/Time: Thurs, Nov 13, 8:30AM – 4:30PM
- Location: – Trimble Navigation, Sunnyvale
- Fall Discount Price: \$325 for IEEE Members

Collaborative Negotiating

- Date/Time: Thurs, Nov 13, 8:30AM – 4:30PM
- Location: – Synopsys, Mountain View
- Fall Discount Price: \$325 for IEEE Members

Interviewing and Hiring the Best Talent

- Date/Time: Thurs, Nov 19, 8:30AM – 4:30PM
- Location: – Data Domain, Santa Clara
- Fall Discount Price: \$325 for IEEE Members

Managing Time & Multiple Priorities

- Date/Time: Wed, Dec 3, 8:30AM – 12:30PM
- Location: – Synopsys, Mountain View
- Fee: \$300 for IEEE Members; \$350 non-members

For complete course information, schedule, and registration form, see our website:

www.EffectiveTraining.com

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-- For engineers retiring in 2009/2010

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Qualifications:

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- You are fully eligible to work in the United States
- You are retired or planning to retire in 2009

Information session (Webinar):

Thursday, Dec. 4 at Noon

Please visit our website for full information:

www.encorpsteachers.org

What's in Store For Storage: The Future of Non-Volatile Technologies

Learn about the latest HDD & SSD Technologies

Thursday, December 11, 2008

**Embassy Suites Hotel,
Milpitas**

The intensive importance of today's storage products to successful applications in information, data processing and entertainment systems has encouraged growth in capacity, performance and reliability at greatly reduced costs. These trends are expected to continue into the future, and in fact, it is anticipated that storage technologies will be selected based on their extendibility to future applications.

This IDEMA symposium addresses the wide spectrum of storage technologies, some existing in today's products as HDD magnetic storage and SSD Flash memories, as well as emerging technologies including MRAM, PCM, FRAM, FeRAM, PFRAM, SEM, 3-D and nano-technologies. Key industry experts will discuss the progress and acceptance criteria for these future technologies, including power requirements and endurance. The result will be a roadmap for storage technologies for present and future applications to assist in the selection of new concepts for the continuation of storage growth.

Plan to Attend!

Talks by ...

Ravi Chari, Sun Microsystems

Steve Hetzler, IBM Fellow, IBM

Don Barnetson, Sr. Director of Marketing SSD, SanDisk

Scott Shadley, Sr. Manager of SSD Product Marketing, STEC

Tom Coughlin, Ph.D., Pres & Founder, Coughlin Associates

Theodore Tso, MIT (Linux)

Anil Vasudeva, President & Chief Analyst, IMEX Research

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TUESDAY December 2, 2008

Navigating the Murky Waters of Home Networking: HomeGrid, G.hn

Speaker: Hendrik van der Meer, Gigle Semiconductor
Time: d Pizza + Drinks, Networking at 6:30 PM, Presentation at 7:30 PM
Cost: Free for IEEE CES members, \$5 for IEEE members, \$10 for non-members
Place: Hewlett Packard, Oak Room, 19447 Pruneridge Avenue (Building 48), Cupertino
RSVP: not required

Hendrik van der Meer is the director of business development at Gigle Semiconductor. Gigle Semiconductor is a home networking company that is helping enable the “anywire” vision in the home and helps overcome the coverage issues that have delayed the deployment of home networking technologies. Before starting at Gigle he worked for 13 years at Intel in a series of sales and marketing roles. He has done sales into the PC OEMs, launched Intel’s first WLAN products into the Japanese market, served on the board member on the DVD Forum, chaired the DVD Verification Task Force, and was the marketing manager for an optical division in Intel. He is now focused on developing the customer base for Gigle Semiconductor working with networking OEMs, PC manufacturers, CE OEMs, and service providers.

The home networking industry today is at a cross roads. The industry needs a solution to provide a network that extends throughout the home for the proliferation of HD video content. This extended home network is not available today and the main issue is there is no one solution that extends out to all parts of the home with some level of QoS to meet acceptable viewing expectations. Wired and wireless home networking technologies currently do not meet the baseline requirements for transporting multiple streams of HD content throughout the home. Wired technologies like powerline, phonenumber and coax are seen as the best way to distribute this HD content but there is a lot of work that needs to happen to develop a solution that will meet service providers’ needs and end users’ expectations. The ITU and its G.Hn group is one standards organization that is leading the way in developing a specification that would unify a fragmented industry – but will it be enough to solve the coverage issues? This presentation will discuss the current state of the home networking market and the hurdles that need to be addressed in finding the right solution.



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WEDNESDAY December 3, 2008

AMD's Stream Computing Platform: From the Hardware to the Software ("Cheap Supercomputing" series)

Speaker: Dr. Justin Hensley, AMD Graphics Product Group
Time: Refreshments, Food, and Social Time at 6:00 PM; Presentation at 7:00 PM
Cost: none
Place: UC Santa Cruz (Room 180, Engineering Bldg 2), Santa Cruz
RSVP: by email to Marcelo Siero, siero@ee.com
Web: ee.com/amdgpu

GPUs can do more than just graphics. Some compute-bound problems at the bleeding edge of technologies ranging from financial modeling to seismic simulation for oil exploration to the medical sciences are seeing 10x to 100x and beyond speedup from the same GPUs used to play your favorite PC game. This brief talk will give you an introduction to AMD's groundbreaking work in bringing GPUs into this new compute frontier.

Justin Hensley is member of technical staff in AMD's Graphics Product Group Office of the CTO focusing on parallel programming using graphics processors. Since joining AMD, Justin has been involved with several projects including face recognition, depth extraction, and game physics. Recently, he has been involved with driving the compute requirements, and the associated software stacks, of next generation graphics processors. Justin received his Ph.D. in Computer Science from the University of North Carolina at Chapel Hill in 2007. He also holds an M.S. in Electrical Engineering and a B.S. with a double major in Electrical Engineering and Computer Science Engineering from the University of California at Davis.



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WEDNESDAY December 3, 2008

Public School Teaching – Your Next Career: Rewire, Don't Retire

Speakers: Professors from SJSU's School of Education, plus teachers and students

Time: 5:30 PM - 7:30 PM

Cost: none

Place: San Jose State University

RSVP: by email to Sarah,
sarah@encorpsteachers.org

Web: www.encorpsteachers.org



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To learn more, join us for an EnCorps' information session in San Jose on December 3, 2008. We will be joined by professors from the school of education as well as teachers and students who can share their insights about teaching in today's classroom.

THURSDAY December 4, 2008

SWOT Analysis: Examination Tool for Business or Career

Speaker: Chris Sims, Technical Management Institute
Time: Facilitated Networking at 6:30 PM; Dinner at 7:15 PM; Presentation at 7:45 PM
Cost: \$25 (IEEE member), \$30 (non member)
Place: Ramada Inn, 1217 Wildwood Ave, Sunnyvale
RSVP: using form on website
Web: www.ieee-scv-ems.org

Chris Sims is a teacher, coach, facilitator, consultant, coder, agile evangelist, and all-around geek. He is the founder of the Technical Management Institute and the Bay Area Engineering Managers Support Group. He enjoys teaching engineers how to lead people, projects, and teams.

SWOT analysis is a tool commonly taught in business school to examine internal strengths and weaknesses as well as external opportunities and threats. It was originally conceived to help corporations formulate high-level business strategy, but it has proven useful in a broad range of situations. SWOT is an excellent tool for evaluating business opportunities such as starting a new business, entering a new market, pursuing a new development project, or allocating resources in areas such as recruiting or training.

This workshop will teach you how to do a basic SWOT analysis, using your career or your company's business as a practical application. You will learn a valuable analytic tool and gain insight into your own career or company.

Pre-meeting Facilitated Networking – "Strengths and Weaknesses"

Attendees are encouraged to think about the night's theme – business and career evaluations and outcomes – what is needed in today's economy? Facilitation will be by one of the chapter's board members. Get to know fellow meeting attendees.

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MONDAY December 8, 2008

Exploiting Real World Channels for Increased Capacity

Speaker: Speakers: E. Tsui and X. Qian, Intel
Time: Fast Food & drinks at 6:30 PM;
Presentation at 7:00 PM
Cost: \$2 Donation Recommended towards Refreshments
Place: National Semiconductor (north end of Building E), 2900 Semiconductor Dr., Santa Clara
RSVP: not required
Web: www.ewh.ieee.org/r6/scv/sps

Directional channel models are becoming accepted channel models for an increasing number of standards that require MIMO processing. We will cover exactly what these directional channels are, how they are modeled, and how they relate to reality. Then we will discuss the impact of the models on MIMO performance and link budgets.

Ernest Tsui is a principal engineer and wireless architect at Intel. He is a senior member of the IEEE. He has worked in software and reconfigurable radio research, digital television, antennas, WiMax, and cable modems at Intel. He earned his BS, MS, and PhD all at U.C. Berkeley.

Xiaoshu Qian has been with Intel Corporation for 11 years, where he works in communication and DSP system design. He has also taught many graduate courses in these areas at several universities, most recently at Santa Clara University. He received his Ph.D. in Electrical Engineering, M.S. in Computer Science and M.S. in Mathematics, all from University of Rhode Island, and B.S. in Physics from Zhejiang University in China. He has published numerous technical papers and is the main author of four U.S. patents with several pending.



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TUESDAY December 9, 2008

Consultants' Forum #2: Getting Paid / Annual Meeting

Speakers: Nina Yablok, business and corporate law;
Jonathan Sweet, litigation and
transactional law

Time: 7:00 PM

Cost: none

Place: KeyPoint Credit Union, 2805 Bowers Ave.,
Santa Clara

RSVP: not required

Web: www.CaliforniaConsultants.org

Nina Yablok's business and corporate law firm specializes in representing privately held businesses. She is a graduate of St. John's University School of Law in New York City. She is active with the Business Law sections of both the State Bar of California and the Santa Clara County Bar Association.



Ms. Yablok has written and lectured extensively in the areas of independent contractor relationships and business start-ups. In addition to many magazine articles, she is the author of *Minimizing Independent Contractor Disputes Action Guide*, published by University of California, Continuing Education of the Bar. Nina enjoys working with high-tech companies, and she shares her thoughts on business, law and other topics on her BizLaw Blog.

Jonathan J. Sweet works for clients on litigation and transactional matters. He is the author of two books on the subjects of contracts and avoiding litigation, and he has taught law courses at Lincoln Law School of San Jose, San Jose State Univ. and the Univ. of San Francisco (USF).



Jonathan has created a Risk Management Video that addresses some important contractual issues. He is available to act as an arbitrator or mediator to help resolve disputes. He also serves as an expert witness and consultant in litigation. Jonathan received his BA from UC Berkeley in 1978 and his JD from USF in 1985. He lectures regularly for Lorman Education Services on transactional and litigation matters for clients.

Nina Yablok:

The best way to get paid is to prepare in advance by ensuring that you and your client have shared expectations. Payment problems often result when the client doesn't have a realistic idea about what they are buying and when they are getting it. Expectations go beyond the scope of the project itself and also include other "what if" scenarios. What if we come to a disagreement? What if your payments are late? What if you neither accept or reject the work? What if I have to go to an attorney? Before the project starts, you can help yourself get paid by crafting a clear and "collections-friendly" contract.

This part of December's program will pick up on themes from the November *The Contract* program, but will go into more detail on parts of the contract that are specifically addressed to collections, or what lawyers like to call remedies.

Jonathan J. Sweet:

If the contract language you have used is not sufficient to recover money you are owed, you may be compelled to take more serious steps. These steps may include filing a lawsuit in either Superior Court or Small Claims Court. A suit in Superior Court usually requires that you use an attorney.

Your contract may have an arbitration or mediation clause, and these clauses may allow you to avoid paying legal fees to an attorney to help you recover your money. Mediation uses a retired judge, attorney or industry expert to help you and the other party negotiate a compromise solution. Arbitration may use a professional arbitrator or retired judge who hears evidence and makes an award, which can then be converted to a judgment.

Critical factors to be considered in determining how you will resolve your payment problem include (1) whether you plan or wish to do business with this party again in the future, and (2) whether the non-paying party has the money or assets to pay you. A judge or arbitration does not give you a check for what you are owed, only a piece of paper saying you are legally entitled to be paid. Separating your anger at not getting paid from being rational about how your approach this problem will help you resolve it more effectively, given your particular facts and circumstances.

Brian A. Berg is a Director on the Board of IEEE-CNSV. He will be moderating this meeting, including coordinating some stories to be shared by some fellow IEEE-CNSV members.

TUESDAY December 9, 2008

WiMAX and White Spaces: What the EMC Engineer Needs to Know for 2009 and Beyond


Speaker: Tom Cokenias
Time: Social/food at 5:30 PM; Presentation at 6:30 PM
Cost: none
Place: Applied Materials Bowers Cafeteria, 3090 Bowers Ave., Santa Clara
RSVP: not required
Web: www.ewh.ieee.org/r6/scv/emc

Tom Cokenias is an independent consultant for EMC and Radio Approvals, and an IEEE member since 1983. After spending 8 years at the FCC Laboratory in Columbia, MD, he moved to the SF Bay Area and worked in senior engineering positions for several local EMC laboratories. He has served the Silicon Valley EMC Society Chapter in several capacities, including chairman.

The WiMAX standard for radio transmission has been in development for almost ten years, and is now beginning to get significant traction. There has been an exponential increase in the number of products and types of service available for WiMAX products this past year, and these products are being targeted to compete with WiFi for services and consumer dollars. Traditional base stations and subscriber units are being augmented by WiMAX products in handsets and laptops, which will eventually make them a ubiquitous concern for EMC in the way that cellular telephones have become.

In February 2009 all analog TV stations in the United States will convert to digital. Several prime frequency bands will be vacated, the so-called White Spaces between the digital TV allocations, and recent FCC rule-making has allowed unlicensed devices to operate in these bands under new Part 15 regulations. The frequencies extend from low VHF to UHF channels, and devices operating under the new rules are expected to be developed at a rapid rate, given the high penetration and low path losses possible for networks that will use these products. Again, it is expected that these white-space devices will be everywhere WiFi is now, and so will require new scrutiny from the EMC community.

The presentation will go over the basic WiMAX modulations, frequency allocations in the US, and the types of products offered currently and in the near future. The new White Space rule-making will be discussed, including implications for overall EMC of products that will be used with and near these devices.



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WEDNESDAY December 10, 2008

Halogen Free Electronics

Speakers: Dr. Dan Donahoe, Exponent; and Dr. Michelle Poliskie
Time: Seated dinner served at 6:30 PM; Presentation at 7:30 PM
Cost: \$25 if reserved by Dec 7; \$30 after & at door; vegetarian available (no cost for presentation only)
Place: Ramada Inn, 1217 Wildwood Ave (Fwy 101 frontage road at Lawrence Expressway), Sunnyvale
RSVP: by email to Janis Karklins, karklins@ieee.org
Web: www.cpmt.org/scv

Our talk will briefly explain why the environmental community has promoted the removal of halogens, what basic legislation is proposed and how industry standards are addressing the intersection of regulation and technology. We will discuss: the functional value-added with the introduction of halogens in electronics, where halogens are located within electronic assemblies and how the halogens chemically provide these functions. Finally, we will discuss the trade-offs of either removing or limiting their use in electronic assemblies.

Dan Donahoe works in Exponent's Electrical and Semiconductors practice. Dan has 30 years of experience related to electronics integration and reliability. Dan is the 2007– 2008 Chair of the IEEE CPMT Santa Clara Valley Chapter and also serves as an Associate Editor for the **Transactions on Components and Packaging Technology**, on the steering committee for the IEEE Nanotechnology Council and the board for SVEC. He holds a PhD from the University of Maryland, MBA from Santa Clara University, BS and MS from the University of Illinois. He is a PE in California and Arizona and is a Certified Reliability Engineer.

Michelle Poliskie works at a Silicon Valley start-up. There she specializes in process design and material selection of plastics and elastomers. She is a former lecturer at Johns Hopkins University where she taught polymer synthesis, commercial formulations and characterization techniques used to solve problems related to the identification of chemical compatibility and degradation pathways. Michelle holds a Ph.D. in Polymers from MIT and dual bachelors degrees in chemistry and economics from Grinnell College.



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FRIDAY December 12, 2008

Patterned Nanoscale Magnetic Field Sources

Speaker: Dan A. Allwood, Univ. of Sheffield (UK)
Time: 3:00 PM
Cost: none
Place: Lawrence Berkeley Nat'l Lab, bldg 6-2202,
UC-Berkeley
RSVP: by email with name, company, to Peter
Fischer, PJFischer@lbl.gov by Dec 10
Web: ewh.ieee.org/r6/oeb/mag

Dan Allwood is currently an EPSRC Advanced Research Fellow at the University of Sheffield, UK. Before moving to Sheffield in 2005, he worked as a post-doc (with Russell Cowburn) developing magnetic domain wall logic.

Patterned magnetic thin film technology has developed rapidly over recent years, with potential applications in sensor, memory and logic technology envisaged. In particular, extended nanowires made of simple alloys such as Ni-Fe are used in order to support magnetic domain walls. Usually, devices are operated by propagating domain walls using an applied magnetic field or electrical current through the nanowire. However, magnetic domain walls in patterned wires are also nanoscale sources of magnetic field. This field is very high at the nanowire surface (~ 1 T) but drops off rapidly over a few micrometers. We are currently investigating ways of using this stray field to trap biological cells and laser cooled atoms. In one example, we are labeling Schwann cells found in peripheral nerve tissue with superparamagnetic beads and attempting to create a magnetic template for positioning the cells relative to each other. The proximity of the cells is understood to be important for triggering cell division and the development of nerve tissue. If successful, this offers a novel route to nerve tissue engineering for surgical use. For atom trapping, we require an ensemble of laser-cooled atoms such as ^{87}Rb to be addressed into a low-field-seeking state. We can then bias the stray field from domain walls to create a zero-dimensional atom trap with very strong confinement characteristics. The promise of this system is to allow a series of mobile atom traps to enable qubit interactions in a scalable magnetic architecture.

FRIDAY December 12, 2008

Future Directions in Mixed-Signal Circuit Design

Speaker: Prof. Boris Murmann, Stanford University
Time: Refreshments at 6:00 PM; Presentation at 6:30 PM
Cost: none
Place: National Semiconductor Building E, Auditorium, 2900 Semiconductor Dr., Santa Clara
RSVP: not required
Web: www.ewh.ieee.org/r6/scv/ssc

This talk provides a summary of Prof. Murmann's research in the area of mixed-signal integrated circuit design. Focus is placed on examples that either look at "old" problems with "new" eyes, or tackle "new" problems by leveraging state-of-the art technology. Specific topics include digitally assisted data converters, interface circuits for MEMS and bio-medical applications, as well as large-area organic thin-film electronics.

Boris Murmann is an Assistant Professor in the Department of Electrical Engineering, Stanford University. He received the Ph.D. degree in electrical engineering from the University of California at Berkeley in 2003. From 1994 to 1997, he was with Neutron Microelectronics, Hanau, Germany, where he developed low-power and smart-power ASICs in automotive CMOS technology. Dr. Murmann's research interests are in the area of mixed-signal integrated circuit design, with special emphasis on data converters and sensor interfaces. He currently serves as a member of the International Solid-State-Circuits Conference (ISSCC) program committee.



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FRIDAY December 12, 2008

Laser Show at De Anza College Planetarium - An Annual IEEE Holiday Event for the Whole Family

Time: Eat dinner at a local restaurant; cakes and refreshments at 7:00 PM, tour at 7:30 PM, Show at 8:00 PM

Cost: A nominal \$10/person fee in cash will be collected onsite at sign-in desk. (Free for K-12 students or younger children)

Place: DeAnza College Fujitsu Planetarium, Cupertino (see map on website - purchase \$2 parking permit)

RSVP: on website

Web: www.ewh.ieee.org/r6/scv/leos

Every December, SCV-LEOS has a holiday event for the whole family to enjoy. This year, we'll be having a laser light show at the very impressive De Anza College Fujitsu Planetarium, which has a state-of-the-art system. In addition to seeing and enjoying a holiday light show, there will be opportunities before and after the show for interested people to tour the control panel to the system, and even try out the controls for themselves. We will also take some time between numbers to explain how the projection system works, so you can understand "the magic behind the curtain". We will have holiday cakes and drinks before the event, and will be giving short tours to groups of 15 at a time. Please show up a few minutes early if you want a tour. Please arrive no later than 7:50pm if you do not care about the control panel tour or refreshments, but only want to see the show. The show will start promptly at 8pm, and sign-in takes a few minutes.



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FRIDAY December 12, 2008

Holiday Social: Potluck Party & E-game Networking

Theme: Electronic (computer) Games; bring your game system (or laptop)
Time: 5 PM to Midnight
Cost: Please bring 1 Food Item for 6, per person (main Dish, side dish, salad, dessert or beverage)
Place: David Residence, 3231 Haddon Way (Evergreen District), San Jose 95135
RSVP: EventBrite, from website (Space WILL be limited)
Web: www.ewh.ieee.org/r6/scv/gold

Its time for the GOLD Winter Holiday Social. Please join us for a fun time and great company. This year's theme is **Electronic (computer) Games**.

Electronic technologies have transformed entertainment over recent years, from Electric Guitars to Digital Projection, from Performance to the interactivity of Role Playing games. Many IEEE-GOLD members already have **gamer skilz**, and the hardware to prove it. No Formal Presentations, just **bring** your gaming platform, games, your ILAN (and extention) cables and hubs (wired or wireless), some food, and/or a beverage (enough for 6 to share) , and invite your techie friends.

Whether you "Has Skilz" or are just curious about what everyone sees in this, we will have fun with games from **Adventure** to **Halo**, from **Second Life** to **Guitar Hero** ... and maybe even some Wii **bowling!** Good food and new friends too.

RSVP required.

Who would like to host the next one??

TUESDAY December 16, 2008

Large-Scale Combustion Manufacture of Fullerenes and Single-Walled Carbon Nanotubes and their Processing

Speaker: Dr. Henning Richter, Director of Materials
Synthesis Research, Nano-C, 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: on the website
Web: www.ieee.org/nano

Dr. Henning Richter joined Nano-C in 2001, shortly after its foundation while working as Research Associate in the Department of Chemical Engineering of MIT. Dr. Richter has been working extensively for more than 10 years on combustion generated fullerenes, nanotubes and their byproducts. He has been particularly interested in the isolation and characterization of fullerenes larger than C₆₀ and C₇₀. The other major axis of his work has been the numerical description of combustion systems by means of complex kinetic models. Previously, at the University of Namur (Belgium), Henning focused, among other things, on the optimization of yields of fullerene formation in combustion processes as well as the effects of metal and halogenated additives. He gained his undergraduate degree in Chemical Engineering from the Chemistry Department of the Technical University of Darmstadt (Germany) and his Doctorate from the Catholic University of Louvain (Belgium). He has authored many papers and has been "Invited Professor" at the Universities of Rouen (1998), Lille (2001) and Mulhouse (2004).

Fullerene materials such as C₆₀, C₇₀, C₈₄ and single-walled carbon nanotubes (SWCNT) are of significant interest for a large range of electronic applications such as organic photovoltaic (OPV) devices, transistors, sensors and transparent conducting films. Controlled premixed combustion has been developed as a reliable, scalable process for their large scale manufacture and demonstrated successfully in pilot plants. Depending on the operating conditions either fullerenes (C₆₀, C₇₀, ... C₈₄, ...) or SWCNT are formed selectively. Chemical functionalizing allows tailoring solubility in different solvents and electronic properties. The use of fullerene derivatives as electron acceptors in OPV devices is currently approaching commercialization while transistor applications are not too far behind. Efficient purification methods for SWCNT have been developed. Their further processing including chemical functionalization and dispersion will be discussed. The detailed characterization of combustion-based SWCNT using a large range of techniques will be described along with their key application areas.

WEDNESDAY December 17, 2008

**SF Communications Society
Holiday Party**

Topics: Holiday celebration, welcome new Officers,
ideas for IEEE activities during 2009
Time: 6:00 PM - 9:30 PM
Cost: none
Place: City College Downtown Campus, 88 4th
Street, San Francisco
RSVP: by email to Michael Butler,
mjbsf@verizon.net
Web: www.e-grid.net/docs/0812-sf-comsoc.pdf

Please join us for hors d'oeuvres and refreshments to celebrate the holiday season, welcome the new Officers, and share ideas for IEEE activities during 2009. The campus is close to the Powell Street BART station; parking is also available nearby at the 5th and Mission garage.

THURSDAY December 18, 2008

Advances in Cognitive Memory and its Applications

Speaker: Dr. Bernard Widrow, Professor of Electrical Engineering, Stanford University
Time: 6:00 PM
Cost: none
Place: Stanford University, Packard 101
RSVP: not required
Web: www.e-grid.net/docs/0812-scv-ci.pdf

Bernard Widrow received the S.B., S.M., and Sc.D. degrees in Electrical Engineering from the Massachusetts Institute of Technology in 1951, 1953, and 1956, respectively. He joined the MIT faculty and taught there from 1956 to 1959. In 1959, he joined the faculty of Stanford University, where he is currently Professor of Electrical Engineering.

He began research on adaptive filters, learning processes, and artificial neural models in 1957. Together with M.E. Hoff, Jr., his first doctoral student at Stanford, he invented the LMS algorithm in the autumn of 1959. Today, this is the most widely used learning algorithm, used in every MODEM in the world. He has continued working on adaptive signal processing, adaptive controls, and neural networks since that time.

Dr. Widrow is a Life Fellow of the IEEE and a Fellow of AAAS. He received the IEEE Centennial Medal in 1984, the IEEE Alexander Graham Bell Medal in 1986, the IEEE Signal Processing Society Medal in 1986, the IEEE Neural Networks Pioneer Medal in 1991, the IEEE Millennium Medal in 2000, and the Benjamin Franklin Medal for Engineering from the Franklin Institute of Philadelphia in 2001. He was inducted into the National Academy of Engineering in 1995 and into the Silicon Valley Engineering Council Hall of Fame in 1999.

Dr. Widrow is a past president and currently a member of the Governing Board of the International Neural Network Society. He is associate editor of several journals and is the author of over 100 technical papers and 18 patents. He is co-author of **Adaptive Signal Processing** and **Adaptive Inverse Control**, both Prentice-Hall books. A new book, **Quantization Noise**, was published by Cambridge University Press in June 2008.



Regarding the workings of the human mind, memory and pattern recognition seem to be intertwined. You generally do not have one without the other. Taking inspiration from life experience, a new form of computer memory has been devised. Certain conjectures about human memory are keys to the central idea. The design of a practical and useful "cognitive" memory system is contemplated, a memory system that may also serve as a model for many aspects of human memory. The new memory does not function like a computer memory where specific data are stored in specific numbered

registers and retrieval is done by reading the contents of the specified memory register, or done by matching key words as with a document search. Incoming sensory data would be stored at the next available empty memory location, and indeed could be stored redundantly at several empty locations. The stored sensory data would neither

have key words nor would it be located in known or specified memory locations. Sensory inputs concerning a single object or subject are stored together as vectors in a single "file folder" or "memory folder." When the contents of the folder are retrieved, sights, sounds, tactile feel, smell, etc., are obtained all at the same time. Sensor fusion is a memory phenomenon. The sensory signals are not fused, but they are simply recorded together in the same folder and retrieved together. Retrieval would be initiated by a prompt signal from a current set of sensory inputs or patterns. A search through the memory would be made to locate stored data that correlates with or relates to the present real-time sensory inputs. The search would be done by a retrieval system that makes use of auto-associative artificial neural networks. Applications of cognitive memory systems have been made to visual aircraft identification, aircraft navigation, and human facial recognition. Other applications to speech recognition and control systems are being explored.

WEDNESDAY January 14, 2009

**Microscope on a Chip:
A Highly Compact Lensless
High-Resolution Optofluidic
Microscope (OFM)**

Speaker: Xiquan Cui, PhD candidate in Electrical Engineering, Caltech
Time: Optional dinner at 6:30 PM; Presentation at 7:30 PM
Cost: \$25 if reserved by Jan. 12; \$30 after (no cost for presentation)
Place: Biltmore Hotel, 2151 Laurelwood Rd (Fwy 101 at Montague Expressway), Santa Clara
RSVP: by email to Janis Karklins, karklins@ieee.org
Web: www.cpmt.org/scv

Xiquan Cui is currently a PhD candidate in Electrical Engineering at Caltech. He obtained his B.E. and M.S. in Optical & Electrical Engineering from Zhejiang University, China in 2003, and obtained his M.S. of Physics from Portland State University in 2005. He has interests in many research areas, and has worked on a variety of projects in electronics, optics, MEMS and nanotechnology. At present, he is working on developing innovative bio-imaging techniques at the Biophotonics group at Caltech.

Low-cost and high-resolution on-chip microscopes are vital for reducing cost and improving efficiency for modern biomedicine and bioscience. Despite the needs, the conventional microscope design has proven difficult to miniaturize. I will present our work on the first implementation and application of two high-resolution, lensless and fully on-chip microscopes based on the optofluidic microscopy (OFM) method. These systems abandon the conventional microscope design, which requires expensive lenses and large space to magnify images, and instead utilizes microfluidic flow to deliver specimens across array(s) of micron-size apertures defined on a metal-coated CMOS sensor to generate direct projection images. The first system utilizes a gravity-driven microfluidic flow for sample scanning and is suited for imaging elongate objects, such as *Caenorhabditis elegans*; and the second system employs an electrokinetic drive for flow control and is suited for imaging cells and other spherical/ellipsoidal objects. The optofluidic microscope design, readily fabricable with existing semiconductor and microfluidic technologies, offers low cost and highly compact imaging solutions. More functionalities, such as on-chip phase and fluorescence imaging, can also be readily adapted into OFM systems. We anticipate that OFM can significantly address a range of biomedical and bioscience needs as well as engender new microscope applications.

TUESDAY January 20, 2009

Consultants' Forum #3: Marketing Plans

Panel: four consultants wexplain their personal marketing plans
Time: 7:00 PM
Cost: none
Place: KeyPoint Credit Union, 2805 Bowers Ave., Santa Clara
RSVP: not required
Web: www.CaliforniaConsultants.org

A panel of four consultants will explain their personal marketing plans. Such a plan is essential for success as a consultant over the long term.

Come and listen to each speaker's unique personal approach to staying busy as a consultant. Whether you are active as a consultant or not, you are sure to pick up some pointers about ways to improve your personal marketing plan and approach to your own business.

Brian A. Berg will be moderating this panel and the group discussion. His marketing approach includes a well-linked website, speaking at conferences, running numerous listservers and being active in organizations related to his specialty of computer storage and interfaces. He also applies his technical experience to developing intellectual property and working as an Expert Witness.

Sean Murphy will discuss how user communities can be a great low cost way to market and support your products or services. He will offer tips for building and using user communities to expand your customer base and enhance your customers' trust.

Peter C. Salmon's approach includes getting detailed white papers published in various trade journals. He always ensures that any copyright agreements required for his publications include proper attribution so that he can be contacted by interested readers.

THURSDAY January 22, 2009

Trends in IC Packaging and Multicomponent Packaging

Speaker: Sandra Winkler, Electronic Trend Publications
Time: Registration at 11:30 AM; Buffet lunch served at 11:45 AM; Presentation at 12:15 PM
Cost: \$15 if reserved by Jan. 19; \$20 at door
Place: NEW LOCATION: Biltmore Hotel, 2151 Laurelwood Rd (Fwy 101 at Montague Expressway), Santa Clara
RSVP: by email to Ed Aoki, e.aoki@ieee.org
Web: www.cpmt.org/scv

This presentation covers a five-year forecast of the total units, revenue, and pricing associated with the assembly of IC packages; the forecast includes both the total worldwide and the contract package assembly markets. The major package families discussed in this forecast include the DIP, SO, DFN, QFN, CC, QFP, PGA, BGA, FBGA, and WLP.

The talk discusses advanced multi-component packaging trends and applications, including SiP, stacked package variations such as die stack, package stack, and 3D integration with through-silicon-vias (TSVs). Given are examples of specific company offerings.

Sandra Winkler has been an industry analyst since 1988, as an independent consultant and as a staff member of Electronic Trend Publications. She has produced numerous off-the-shelf and custom reports. Ms. Winkler began her analyst career in the telecommunications industry. Since 1995, she has focused on the semiconductor packaging industry, and has authored a number of widely cited reports on the topic, including the **Worldwide IC Packaging Market**, **Advanced IC Packaging**, and **IC Packaging Materials**. She also writes for Chip Scale Review Magazine's midweek report. Ms. Winkler has an MBA from Santa Clara University. She is a member of the IEEE-CPMT Santa Clara Valley chapter, and of MEPTEC.

Ms. Winkler has presented papers at industry and professional-organization events such as Semicon West, the International Wafer-Level Packaging Conference (IWLPC), JEDEX (sponsored by the JEDEC Solid State Technology Association), the Microelectronics Packaging and Test Engineering Council (MEPTEC), the Semiconductor Assembly Council (SAC), the International Microelectronics And Packaging Society (IMAPS) and the Electronic Packaging and Manufacturing Committee of the U.S. National Committee of the International Commission on Illumination (USNC/CIE). She has acted as a moderator for the the Fabless Semiconductor Association (FSA, now GSA).

TUESDAY January 27, 2009

Energy Savings Programs – A Practical Approach to Implementation

Speaker: Finn Schenck, Integrated Building Solutions
Time: Social at 5:30 PM, Presentation at 6:00 PM, Dinner at 7:00 PM
Cost: \$25 (\$10 for first 5 reserved IEEE Student Members); pay at door
Place: Sinbad's Restaurant, Pier 2 The Embarcadero, San Francisco
RSVP: by email to Jack Lin, jlin@sflower.org, 415.551.4894
Web: www.e-grid.net/docs/0901-sf-ias.pdf

Our speaker is **Finn Schenck**, from Integrated Building Solutions. He received his B.S. in Mechanical Engineering from San Jose State University. Finn worked for Square D Company for 19 years before joining Integrated Building Solutions, Vice President of Sales. He is a past Chair of IEEE SF/IAS and OEB IAS, and currently serves as the Treasurer of IEEE SF/IAS.

Our January speaker will discuss several “Easy to Implement” energy saving opportunities, and review some of the tools available to monitor, measure, report on, and validate the success of energy saving programs. Energy saving programs present significant opportunities for businesses to save money, to improve operating reliability, and to raise customer awareness. Finn will discuss how to get started, what to monitor, how to implement energy saving opportunities, and how to measure the results. We will review some “typical” opportunities for improvement in any office, school district, or industrial environment. The presentation will include a look at energy saving programs, and monitoring tools, in use at local industrial, commercial and educational facilities.

Please join us in welcoming our speaker to San Francisco for what is sure to be an interesting and productive session.