IEEE Buenaventura Section

March 2012 Newsletter

Wed. 14 Mar.	Computer	**Web Content, Writing, and Programming** IEEE Members Richter Auditorium, California Lutheran University 6:30 pizza, networking, 7pm presentation **Register:** https://meetings.vtools.ieee.org/meeting_view/list_meeting/11179
Wed. 21 Mar.	Section	**Science Fair & STEM Expo** 8-3pm Ventura County Fair Grounds **Contact: Momin Quddus; see below**
Wed. 21 Mar.	AES LMAG MTTS	**Computational Modelling for Electric Rocket Propulsion** Dr. Ioannis Kikellides, NASA JPL 6:30pm – pizza, networking, 7pm presentation Vitesse Semiconductor, 741 Calle Plano,Camarillo, CA 93012
Thu. 22 Mar.	Section	**Science Fair Awards** 6pm Ventura County Fair Grounds **Contact: Momin Quddus; see below**
Mon. 26 Mar.	Section	**Section Operating Committee Meeting** Section and Chapter Officers 6:30 PM Mandarin Buffet, TO
Wed. 28 Mar.	EMBS	**Wireless Integrated Brain-Machine Interfaces** Dr. Gert Cauwenberghs, UC San Diego 6pm dinner ($10 at door, no RSVP), 7pm discussion California Lutheran University Ahmanson Hall (ASC 100) **More info:** http://www.ieee-bv-embs.org/?p=367 **RSVP**: Pat Jacobs pat.jacobs@advancedpersonnelprofiles.com
Mar.	ComSoc ED/CAS PES RAS	No events planned this month.

Membership Development

2012 Membership

Remember to renew for 2012!

If you are an IEEE member and are currently between positions, select the "unemployed" option on the renewal to receive a 50% discount.

To apply to join, see

http://www.ieee.org/join or http://www.computer.org/join

NOTE: due to software upgrade, the IEEE renewal and membership systems will be offline 1-3 March and 30 March – 1 April.

– Bridge Carney, Section Vice Chair, Membership Dev.

Please Welcome Our New Members

Please join me in welcoming our newest Section members:

- Antonio Martinez
- Brandon Sucher
- Carlos Schulte
- Chenchin Yeh
- Jason Farkas
- Scott Okuma
- Troy Rockwood

Members can find and make contacts by searching MemberNet at the IEEE Member Portal. For new members, please
update and share your information at the portal to help connect you to everyone, and
remember to set up your new IEEE email forwarding address.

– Karl Geiger, Section Chair

Job Opportunities

Are you an EE?

Second Sight (www.2-sight.com) in Sylmar is searching for a **QUALITY ENGINEER** and a **MANUFACTURING ENGINEER** who are also **EEs**. Great company, stock options, excellent opportunity.

Contact Pat Jacobs

805-579-0630
pat.jacobs@advancedpersonnelprofiles.com

Have an Announcement?

If you have an event or news, IEEE or otherwise, that is of interest to IEEE members please send it to Zak Cohen, newsletter@ieee-bv.org, so it can appear in the newsletter and the website. If you wish to write for the newsletter or website, please contact Zak or a Chapter chair.

--Zak Cohen, Section Secretary

Community Outreach and Service

Ventura County Science Fair

Ventura County Office of Education (VCOE) seeks scientists and engineers to judge 2012's Science Fair projects. Breakfast and lunch are included.

Judges review and score projects from students in grades 6-12 covering computing, mathematics, electronics, physics, environmental and biological sciences, and more. Ventura County has sent many budding scientists and engineers on to both State and National Competitions where they have secured 1st, 2nd and 3rd place in several categories.

Ventura County has held Science Fair annually since 1955. Please come make the 58th Fair a success for our best and brightest young minds.

Contact **Momin Quddus** about joining the **IEEE Buenaventura judging team** or to participate as an **IEEE representative to the STEM Expo at Science Fair**. Judging and STEM Expo are 21 March, awards are 22 March. See

> http://www.ieee-bv.org/2012/02/2012-science-fair-judging-and-awards/

Contact the John Tarkany, Ventura County Office of Education, at jtarkany@vcoe.org, for information about judging or see details on the Web at

> http://www.vcoe.org/sc/ScienceFair.aspx

IEEE Science Project Contest

- **Sponsor**
  Institute of Electrical and Electronics Engineers' Buena Ventura Section. (IEEE BV Section)
- **Entry Criteria**
  All Project Entries in Ventura County Science Fair which use or generate electricity in the implementation of the project will automatically be entered in this Contest. This includes use of computers.
- **Judging**
  A 3 to 4 panel of judges from IEEE BV Section will chose the eligible entrants and determine the winners.
- **Prize**
  1st Prize : $400 Gift Certificate.
  2nd Prize : $300 Gift Certificate.
  3rd Prize : $200 Gift Certificate.
  4th Prize : $100 Gift Certificate.

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Advancing Technology
for Humanity

To register to be a judge, see the VCEO Science Fair Judges page at

http://survey.vcoe.org/Survey.aspx?s=c9bfb3f1eacf44eba210481e3bbc92ad

John Tarkany

Section and Chapter News and Events

Leap Year Social Event,

The Leap Year social event was a terrific time. About 35 members and guest turned out Wednesday evening 29 February at the Westlake Hyatt. We took plenty of pictures of people who had their backs to the camera.

It was great to see many long-time and new members of the IEEE. Several members are also available to become Senior IEEE members, so we'll be putting together another elevation event.
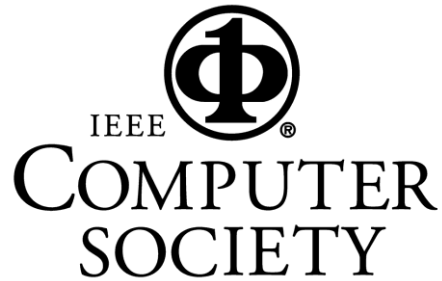
Attendees were from diverse IEEE fields in microwaves, computer software, electron devices, telecommunications, power and energy, sensors and MEMs, and several others. The Communications Society, Computer Society, and Power and Energy Society chapters were on hand to talk about what's available and what's upcoming.

Companies were present as well. HRL Laboratories is hiring, for example, as is SpaceX and several other local firms.

Several conversations were actively solving business and technical problems. Folks from the Motion Pictures Academy of Arts and Sciences discussed light and camera problems with engineers working in aviation photonics. Microwave antenna experts where talking about WRAN and MiFi deployments locally.

See you at the next mixer!

Last month...

If you missed last month's "Analysis of the Stuxnet Worm" presentation by Symatec's Liam O'Murchu, please find a [summary now available online](summary).

This March ...

Can you program in PHP, MySQL, Perl, JavaScript, HTML, CSS, Google, or on mobile platforms? Can you write or edit?

Do you want to?

Do you want to learn?

If so, then the Computer Society and Buenaventura Section seek members who are enthusiastic about making and programming web content. There is capacity and tools and want folks to have fun and use them. And, for both students and professionals in the job market, the only thing better than a resume is to a link to a cool app with the statement "I built this".

This month's meeting is a meeting of minds for IEEE members who want to start hacking up their ideas with each other.

Where:
     Richter Auditorium, California Lutheran University

When:
     6:30pm Networking, 7:00pm Project planning and Setup

Register to Attend:
     https://meetings.vtools.ieee.org/meeting_view/list_meeting/11179

You are Invited to a Joint Meeting of the IEEE

Aerospace, Life Member Affinity &

Microwave Theory & Techniques Society
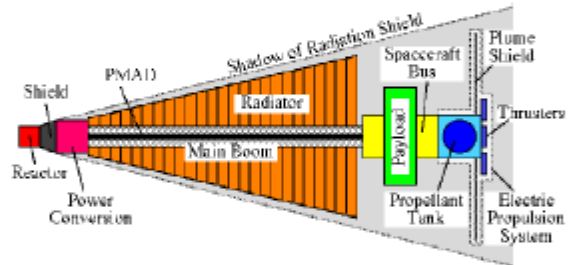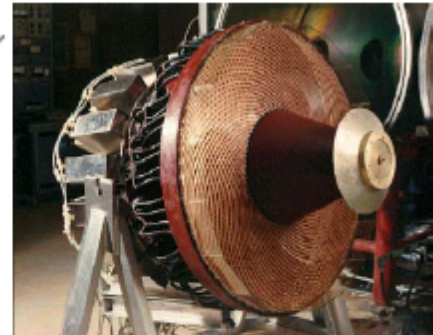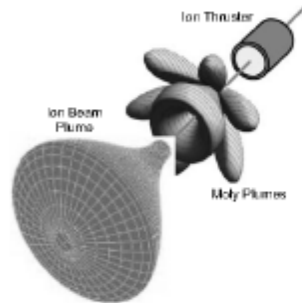
Date/ Time: Wed March 21st, 2012
6:30 PM   Pizza &
networking
7:00 PM   Presentation

Location: **Vitesse Semiconductor**
741 Calle Plano
Camarillo, CA 93012

Speaker: **Dr. Ioannis ("Yiangos") G.**
Mikellides, Sr Engineer at NASA JPL

Title: **Computational Modeling of Partially-**
Ionized Gases for the Assessment
and Mitigation of Material Degradation
in Electric Rocket Propulsion

Abstract

Electric propulsion (EP) embodies several plasma rocket technologies that can enable new science missions for NASA. The Ion and Hall thrusters have emerged as primary candidates for science missions based on superior performance and proven records in space flight. As NASA looks ahead to increasingly ambitious science goals however, missions become more demanding of the life of the propulsion system. Prior emphasis with these thrusters was on propulsive performance, with a shift now towards extending service life. Two major challenges emerge with extended thruster operation. First, degradation of these thrusters occurs from ion bombardment of material surfaces. So in addition to understanding complexities of ionized gas, we need to learn about the close coupling that exists between the gas and the thruster materials. Second, since life testing requires vacuum facilities, cost and time associated with such tests will rise. Launch window opportunities and mission timelines may simply rule out a multi-year life test. Some combination of analysis and test must be adopted in the life qualification process of EP to manage costs. Computational modeling of EP has been receiving increasing attention at NASA as one avenue of development.

Considering all potentially life-limiting mechanisms in Ion and Hall thrusters, two are of primary concern: (a) the erosion of the acceleration channel in Hall thrusters and, (b) the erosion of the hollow cathode, a component that is necessary for the operation of both types of thrusters. The physical processes leading to material wear in these devices are uniquely challenging. Driving plasma physics will be elucidated based on insight gained from advanced numerical simulations at the JPL. Breakthroughs on erosion mitigation will also be presented, which, after more than three decades of R&D, may lead to "immortal" Hall thrusters in the very near future.

MICROWAVE THEORY AND TECHNIQUES SOCIETY
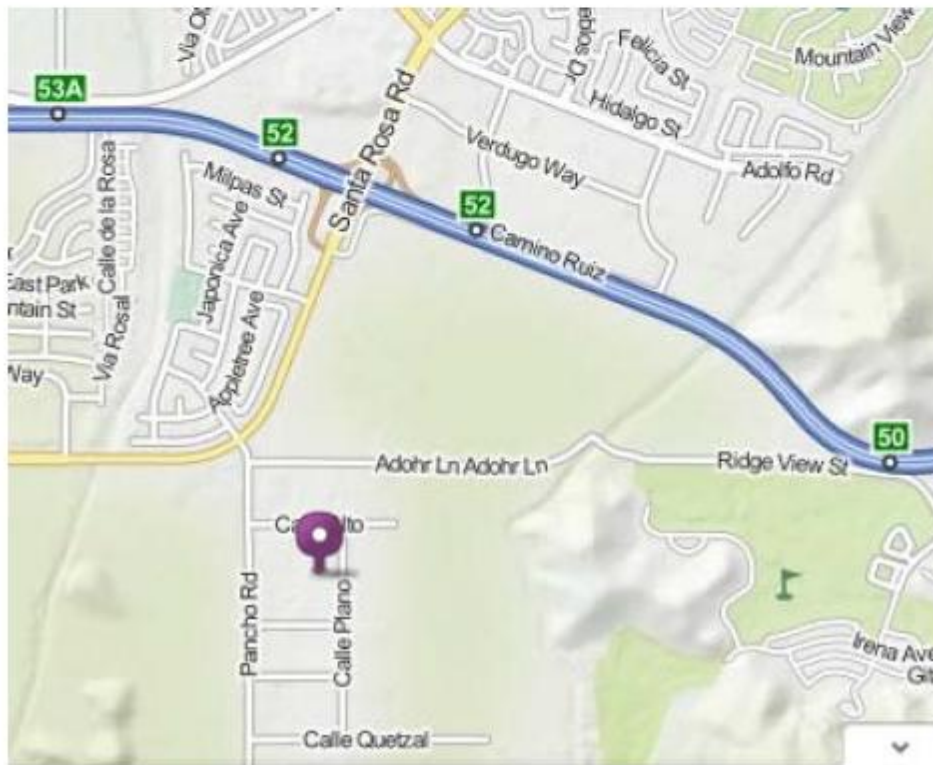## *BUENA VENTURA SECTION*

Background

Dr. Mikellides received his doctoral degree in Aeronautical and Astronautical Engineering in 1999 from Ohio State Univ with a concentration in plasma propulsion and computational magneto-hydrodynamics. Since 1992 he has been performing numerical simulations of ionized gases that have spanned a broad range of temporal and spatial scales, in problems such as plasma processes within a GW-level, high-pressure (>1000 atm) discharge chamber and hypersonic nozzles, ablative thrusters, fusion-powered subsonic/supersonic plasma flows through magnetic nozzles, rarefied EP plumes and, more recently, X-ray-radiating astrophysical plasmas. Yiangos is an Assoc Fellow of the AIAA and has received multiple awards for his computational work in EP including the NASA Exceptional Engineering Achievement Medal and the Lew Allen Award for Excellence in Scientific Research. He has authored/co-authored 25+ peer-reviewed articles and has presented more than fifty papers at technical conferences worldwide.

Directions

Exit Santa Rosa Road south to Pancho Rd. Take second left onto Calle Alto. Make a right onto Calle Plano. Vistesse is on the right hand side. Come to the main lobby and sign in with the guard.

March 28 – Wireless Integrated Brain-Machine Interfaces
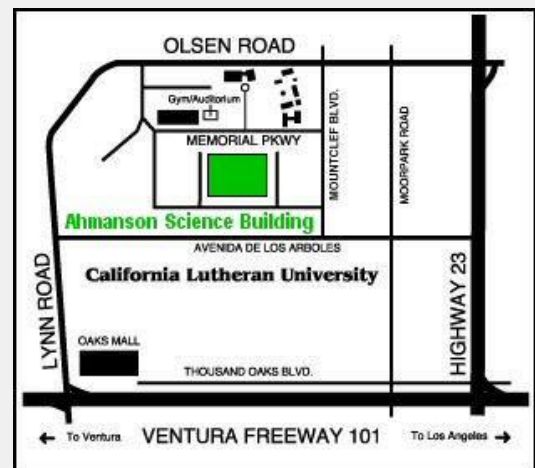# Dr. Gert Cauwenberghs, UC San Diego

The convergence of wireless silicon integrated systems, neurotechnology, and machine intelligence offers unprecedented opportunities to advance the effectiveness, efficiency, affordability, and ease of brain interfaces for neurological monitoring and human-machine communication. We present advances and current trends in wireless brain interface technology with examples of non-contact electroencephalogram (EEG) brain activity sensors, and other highly energy efficient, non-obtrusive wirelesss health monitoring devices for body area sensor networks.

Gert Cauwenberghs is Professor of Bioengineering and Co-Director of the Institute for Neural Computation at UC San Diego. He received the Ph.D. in Electrical Engineering from Caltech in 1994, and was previously Professor of Electrical and Computer Engineering at Johns Hopkins University, and Visiting Professor of Brain and Cognitive Science at MIT. His research focuses on micropower biomedical instrumentation, neuron-silicon and brain-machine interfaces, neuromorphic engineering, and adaptive intelligent systems. He serves IEEE EMBS in a variety of roles including currently as Editor-in-Chief of the IEEE Transactions on Biomedical Circuits and Systems, and Program Co-Chair of the IEEE Engineering in Medicine and Biology Conference (EMBC 2012, San Diego).

Location:	California Lutheran University 60 West Olson Road, Thousand Oaks
Dinner:	In the Atrium of the Ahmanson Science Building, available at 6 p.m. for $10 payable at the door, no RSVP needed.
Lecture:	Nearby, at 7 p.m. Come to Ahmanson beforehand for directions. Meetings are free, open to the public
Parking:	In general, visitor Parking is no longer permitted before 7 p.m. on Memorial Parkway and adjacent streets. However, CLU Public Safety has provided us with parking passes to download and use.
Contact:	Abigail Corrin, acorrin@clunet.edu

More Info/Parking Directions: http://www.ieee-bv-embs.org/?p=367

Neighboring Section News and Announcements

IEEE
San Fernando Valley Section

Upcoming Events - March 2012

Please find attached a PDF document with IEEE San Fernando Valley Section upcoming events. You may download the PDF document at http://sites.ieee.org/sfv/files/2012/02/IEEE_SFV_newsletter_March.pdf

Entry Level PSPICE and MATLAB Workshops <mark>SOLD OUT</mark>
Saturday, *March 3*, 2012
California State University, Northridge
Northridge, CA 91330

Smart Implantable Microtechnology-Enabled Drug Pumps
Tuesday, *March 6*, 2012
St. Jude Medical Cardiac Rhythm Management
Sylmar, CA 91324
Download Flyer   Register

Intermediate Level PSPICE and MATLAB Workshops <mark>3 Remaining PSpice Only</mark>
Saturday, *March 10*, 2012
California State University, Northridge
Northridge, CA 91330
Register

Applications of Nanophotonics: Absorption Engineering, Optomechanical Circuits, and Light-Assisted Self Assembly
Tuesday, *March 20*, 2012
St. Jude Medical Cardiac Rhythm Management
Sylmar, CA 91324
Download Flyer   Register

Career Success Workshop: Resume, Interview, Sustaining, and Beyond
Saturday, *March 31*, 2012
California State University, Northridge
Northridge, CA 91330
Download Flyer   Register

National Research Effort in Information Systems Development

Participants are sought to answer a survey about Information Systems Development.

In some ISD projects, the end-users and developers just seem to "gel" into cohesive, high-functioning, successful teams. In other cases this synergy does not occur, even when the different project teams are following the same basic process. We are missing something when the same general process produces different results.

An ISD effort is typically a new and unfamiliar process for the end-users and subject-matter experts from which goals, requirements, and design elements must be elicited. Today, most of the effort in software requirements elicitation has focused on formal interviews and careful feedback mechanisms, with varying degrees of success. We all make use of the concept of feedback, where information is reported back to the sender to clarify a communication.

The opposite of this concept is feed-forward, where foundational and other support information is given to the recipient to clarify current and future communications. Feed-forward is most often provided as upfront training but can also be implemented as a set of smaller, less formal but more frequent communications. Feed-forward efforts generally result in greater understanding of, and familiarity with, a new process.

Modern processes used by ISD managers focus primarily on requirements elicitation and feedback in the form of documentation for review. In other words, the focus is on transferring high-quality knowledge from the end-users to the developers. But what about transferring knowledge from the developers to the end-users? Could process transparency and mutual familiarity be one of the missing elements associated with successful project teams?

This study surveys sponsors and managers of ISD efforts. The total time required per participant is less than 15 minutes.

Participant information will be held in confidence and no personally identifiable information will appear in either the data or any of the results of this research project. Participants in this research effort will receive a high-level summary of results Web-based or videoconference technical talks on this to participating IEEE sections on request.

If interested in participating, please contact

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Secretary	Zak Cohen	zcohen@ieee.org
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Power and Energy	Bridge Carney	bcarney@ieee-bv.org
Robotics	Bob Rumer	rrumer@callutheran.edu

Be sure to check the Section's websites for the latest updates, meeting flyers, and newsletters. Some event details may change. Sites:

http://www.ieee-bv.org/	Aerospace, ED/CAS, Life Members, Microwave, Power and Energy, Robotics, Section
http://comsoc.ieee-bv.org/	Communications
http://www.ieee-bv-cs.org/	Computer
http://www.ieee-bv-embs.org/	Engineering in Medicine and Biology

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