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**THE
SUNCOAST
SIGNAL**

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.



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This Month's Meetings

Tuesday, December 7th: EXCOM Meeting
Meeting starts at 5:30PM At TECO Plaza

Register online at <http://time2meet.com/fwcs-excom/index.html>

Open to all FWCS Members

EMBS Chapter Meeting

Atrial Fibrillation

Monday, December 6, 2010

[Details and directions see page 4](#)

Plasma-Therm Tour

Thursday, December 9, 2010

Location: 10050 16th Street North, St Petersburg

[Details on Page 6](#)

Robotics and Automation Society Meeting

NO meeting is scheduled for December!

Go to the RAS Page of FWCS Website for Latest Info!

Upcoming Events!

Substation Grounding Seminar

January 28, 2011

Location: Seminole Electric

[Details on page 5](#)

Tampa Bay Engineers Week Banquet

"Engineers Making a World of Difference"

[Details on page 4](#)

This Month...(Editor's Column)

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All material for THE SUNCOAST SIGNAL is due in electronic form by 1st Sunday after the 1st Tuesday of the month preceding the issue month. Address all correspondence to:

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It's hard to believe we are at the end of the year already! As you can see on the first page the events for the month of December are a little thin. It's tough to be the Signal editor at this time of year. There will be changes coming to the Signal next year with increased advertising that will be provided by Jim Anderson who is our Business Manager for the Section. The first quarter of next year will be featuring the big event of the year with the Engineers Week banquet. If you have never attended one you should consider it. The keynote speakers have been interesting and entertaining. We will be back at a familiar location, the A la Carte Pavilion. The details are on page four. I hope everyone has a great holiday!



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Networking Opportunities

IEEE-USA Online Video Scholarship Competition for Undergraduates

\$5,000 in Scholarship Awards to Be Presented in 2010-11 IEEE-USA Online Engineering Video Competition

IEEE-USA is launching the organization's fourth online engineering video competition for U.S. undergraduate students on "How Engineers Make a World of Difference." IEEE-USA will present four scholarship awards totaling \$5,000 to undergraduates who create the most effective 90-second video clips reinforcing for an 11-to-13-year-old audience how engineers improve the world.

Entries must be submitted through YouTube by midnight Eastern Time on Friday, 21 January 2011.

Winning entries will be announced and shown during Engineers Week, 20-26 February 2011, and will also be featured on PBS' "Design Squad" website (<http://pbskids.org/designsquad/>).

Entries in the 2010-11 competition should provide an individual profile of an engineer or technical professional and how he or she makes "a world of difference" in engineering, computing and/or technology. Entries will be judged on their effectiveness in reaching the target audience by portraying engineers or technical professionals as creative people who seek to make life better, as well as on their originality, creativity and entertainment value.

First prize is \$2,000; second prize, \$1,500; and third prize, \$1,000. The first-place winner will also receive up to \$1,000 to cover travel expenses to receive his/her award at the IEEE-USA Annual Meeting in Austin, Texas, on 5 March 2011. Further, a special award for \$500 will be presented for the most innovative and effective showing of a video entry to a "tweener" target audience. This could involve presenting the video entered in the competition at a university engineering expo for K-12 students, in a middle school classroom, with a scout group, or in another setting with 11-to-13-year-olds.

For the complete article go to http://www.ieeeusa.org/communications/video_competition/default.asp



IEEE Job Site Webinar: Looking for new career opportunities in clean technology?

The IEEE Job Site is hosting an employer webinar for Vestas Systems A/S — the No. 1 global manufacturer, seller, installer and servicer of wind turbines. On Wednesday, 15 December at 11:00 a.m. EST, attendees will be briefed on the major benefits of working at Vestas, as well as the company's exciting job opportunities around the globe. To register, go to

http://www.magnetmail.net/forms/display_form.cfm?uid=IEEE_JOB&fid=26516&rtype=nonmm



Florida West Coast Section Officer Nominees for 2011

The following are the nominees for officers for the FWCS for 2011:

Chair – Serge Beauzile
Vice-Chair – Claude Pitts III
Secretary – Ralph Painter
Treasurer – Paul Schnitzler

FWCS PE/IA Chapter Officer Nominees for 2011

The following are the nominees for officers for the FWCS PE/IA Chapter for 2011:

Chair – Serge Beauzile
Vice-Chair – Jim Howard
Secretary/Treasurer – John Stankowich



Substation Commissioning Seminar

On Friday November 12, 2010, the Florida West Coast PES/IAS held a Substation Commissioning attended by 26 IEEE members and 12 guests. The presenters were Ghaff Khazami, Alberto Gutierrez and Nelson Barbeito. Among the many topics covered were Surge Arrester, Power Transformer, Current Transformer, and Circuit Breaker Testing. One of the presenters, Mr. Alberto Gutierrez Agree to return and cover in more detailed Power Transformer Testing.





Seminar



***IEEE FWCS - EMBS Chapter
IEEE Engineering in Medicine and Biology Society
“Atrial Fibrillation – an Enigma Wrapped in a Mystery”***

Speaker: Dr. Fabio M. Leonelli, M.D.

Haley VA, USF Department of Cardiology

Date/Time: Monday, December 6, 2010 at 6:00PM

Location: ENB 109

Abstract: The following projects will be discussed briefly:

- Epidemiology and Incidence of Atrial Fibrillation
- Mechanism of origin and perpetuation of Atrial Fibrillation
- Methods of recording, analysis and their limitations
- Therapy of Atrial Fibrillation

Speaker: Fabio Leonelli is an Associate Professor of Medicine at the Haley VA and

University of South Florida - College of Medicine. He is also the Director of Arrhythmia Service and Program Director of Electrophysiology training. Before joining USF and Haley VA, he was an Assistant Professor and Director of Arrhythmia Service at the Department of Cardiology, University of Kentucky. He received his M.D. degree from Perugia University (Italy), training in Cardiology and Clinical Electrophysiology at Pisa University (Italy), West Australia University (Perth), and Baylor College Medicine in Houston

Directions: See <http://www2.eng.usf.edu/about/contacts.htm> for directions to USF campus and parking information. The seminar room is in the Engineering Building II (ENB)

To register for this event, please visit the website: <http://time2meet.com/fwcs-emb/index.html>

Contact: Ravi Sankar (r.sankar@ieee.org) or John West (John.West@ieee.org)



***Tampa Bay Engineers Week Banquet Coming February 25th!
"Engineers Make a World of Difference"***

We are pleased to announce that the **Tampa Bay Engineer's Week Banquet will be held February 25, 2011** at A la Carte Pavilion. Please join us at this elegant gathering to celebrate the 61st National Engineer and to recognize many contributions made to society by those in the engineering profession.

The evening will feature fine dining, guest speaker **Ken Johnson Director, FIRST Tech Challenge, (FTC)**, and an exhibition room for vendors. And we are expecting as many as four hundred or more attendees including 250-300 engineers, so you will have plenty of opportunities to meet with friends and colleagues in the Tampa Bay technology community.

In keeping with the spirit of the event, awards will be given to accomplished engineers in each engineering discipline and to local university students who excel in engineering related studies. We will also be honoring select local high school educators with the Lignell Award for their outstanding instruction in the area of science, technology, engineering and mathematics.

We hope you will consider being part of this outstanding event to recognize those in the Tampa Bay area who are doing so much to promote engineering.

Cost: \$65.00 per person. (\$55.00 if purchased thru IEEE)





Substation Grounding Seminar

Don't miss your last opportunity to earn your PDH for PE Renewal

This seminar is intended to introduce the attendees to the topic of Grounding, Safety in Electrical Installations, and Lightning Protection. The seminar will address the basic principles that determine grounding system design procedures, the applicable standards and the basis of the standards. Design procedures will be described and will be demonstrated with state of the art computer programs. In particular integrated design procedures will be discussed that address all issues identified in the standards. Finally the important issue of grounding and lightning shielding design will be addressed with demonstrations of the basic methodologies.

Topics include:

- Grounding System Design Principles
- Grounding System Performance
- IEEE Std 80 Design Procedures
- Soil Characterization
- Integrated Grounding System Design Procedures
- Ground Design for Lightning

Speaker: Dr. Sakis Meliopoulos

Cost: \$100 for members, \$150 for non-members and \$50 for students

A. P. Meliopoulos obtained a Diploma in Electrical and Mechanical Engineering from the National Technical University in Athens, Greece in 1972 and a Master in EE (1974) and a Ph.D. degree (1976) from the Georgia Institute of Technology in Atlanta, Georgia, USA. Dr. After receiving a PhD degree in 1976, he joined the faculty of the Georgia Institute of Technology as an Assistant Professor (1976), Associate Professor (1982-88) and full professor (1989-present). Since 1999 he is the Georgia Tech site Director of PSERC, a power system research consortium of universities and industry. Dr. Meliopoulos has pioneered several new analysis and design techniques for safety, protection and electromagnetic compatibility of electric power systems. Dr. Meliopoulos has modernized many power system courses at Georgia Tech, introduced new courses, initiated the power system certificate program for practicing engineers and most importantly he has introduced visualization and animation methodologies that dramatically increase the teaching efficiency of complex power system concepts. Dr. Meliopoulos is a Fellow of the IEEE. He holds 3 patents, he has published two books, a chapter in the Standard Handbook for Electrical Engineers and over 250 technical papers. He has received a number of awards, including the Sigma Xi Young Faculty award (1981), the outstanding Continuing Education Award, Georgia Institute of Technology (2002), three of his papers have received the best paper award (IEEE-PES-SC-1984, IEEE-PES-EC-1987, and IEEE-CSS-HICSS 2002) and he received the 2005 IEEE Richard Kaufman Award. Dr. Meliopoulos was named the Georgia Power Distinguished Professor in 2006.

Seminar Date: January 28, 2011

Seminole Electric, 16313 North Dale Mabry Hwy, Tampa, FL 33618

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http://www.ieee.org/membership_services/membership/senior/index.html



Plasma-Therm Tour

- Date:** Thursday December 09, 2010
Time: 4:00PM – 5:00PM
Speakers: David Lishan, Director of Technical Marketing and Ken Pizzo, Product Engineering Manager
Location: 10050 16th Street North, St. Petersburg, FL 33716
Cost: Free of Charge to attend!
RSVP: Online at: <http://time2meet.com/fwcs-pes4/index.html> (Select Reservations)
Space limited to the first 30 registrants!!!
Please Bring Proof of Employment
Questions: Tim Doolittle at 813-735-2722 or tdoolittle@fastmail.fm

Plasma-Therm is a U.S. based manufacturer of etch and thin film deposition equipment for a number of global compound semiconductor and related specialty markets. For more than 35 years, they have enabled various process technologies by coupling reliable platforms with award-winning service. They hold over 24 patents for innovation in plasma process technologies.

They cater to system requirements from research and development through high volume production. Plasma-Therm is committed to the development of systems and services that meet the quality requirements of their customers. This commitment is backed by their eleven consecutive VLSI THE BEST awards in customer satisfaction and their 22 support and spares locations throughout America, Europe and Asia Pacific.

Their reputation as an industry leader is supported by their 35 year focus on customer support, innovation, reliability and low cost of ownership. Their demonstrated production proficiency in high volume manufacturing environments coupled with a strong presence at many major research institutions secures Plasma-Therm's leadership position as a preferred supplier of plasma process equipment.

<http://www.plasmatherm.com>



USF IEEE Student Branch October Highlights

The end of October was a busy period at the University of South Florida for the IEEE Student Branch. We hosted two events and participated in one other one that involved most of the successful engineering organizations at the University.

The IEEE Student Branch held a joint meeting, on Thursday October 28th, with IEEE-CS, ACM, and Logiklabs, on the topic of robotics. Our very own RIG (Robotics Interest Group) at USF came to talk with about 50 students about their group and what it is like to work with in the field of robotics. RIG specializes in combat robotics and has participated and won various competitions in the nation.

To end the month on a positive note the USF IEEE hosted our Fall Picnic, which included IEEE members, professors of USF and GOLD. The picnic was very successful with over 44 people attending throughout the day from 10:00am – 2:00pm. The chicken and pork kabobs were in high demand and many people, even professors, took advantage of the various activities such as soccer, football, horseshoes and many other small games.

The month of October was a great way for the USF IEEE to begin the fall semester of 2010. We look forward to a very promising year with all the events we are currently planning.

David Touvell

USF IEEE Historian



Teacher in Service Update

Dear Friends,

Happy Holidays to all Teachers & Engineers. The following are important announcements for education and engineering around the Tampa Bay Area. Please continue to browse the Teacher In Service Lesson Plans at the following URL for topics: <http://www.ieee.org/web/education/preuniversity/home.html> or www.tryengineering.org. We want to assign an engineer to a project that is appropriate for your science educators. We encourage every school to take a look at the lesson plans. I need you to pick a lesson plan most appropriate for the event. Please contact me at venner20@ieee.org to ask an engineer to do a presentation for your school going forward. We ask all IEEE members and Certified Engineers to volunteer with your local schools. Please let me know if you are volunteering so that I can provide you with IEEE surveys that need to be given and collected. The IEEE is dedicated to also helping your districts as well. I have attached the IEEE TISP surveys to the email. We can arrange to do these any time at the convenience of the schools and the engineers. We are offering effective and economical alternatives to promote engineering. This is to inspire the educator to perform these activities themselves while enriching their Students. If the teachers and the volunteers work together, students have a better chance at successful careers in engineering. In the long run, it helps "the technological literacy of tomorrow's leaders."

Great American Teach In

Public school systems in several counties that are within the area served by the IEEE-FWCS observed The Great American Teach-In on Thursday, November 18. Ralph Painter presented the IEEE hands-on activity "**Build Your Own Robot Arm**" to about 110 students in six classes of seventh grade students at Largo Middle school. Ms. Lesley Pohley, who has been teaching 33 years, was amazed at how the activity captured the imagination of the students. Many hands-on activities are available for download in PDF format at www.tryengineering.org, a web site that is a joint effort of IEEE and IBM. To download the robot arm activity, enter "robot" as a key word in the web site's search engine.

Tom Blair submitted his presentation at the Great American Teach In.

"I presented to two classes of 5th grade students at Sessums Elementary in Riverview. The children are studying the topic of energy for their science program and I tried to fit the presentation to the topic of energy that they were covering in class. I discussed the various energy conversion processes that occur at a power plant. We discussed the conversion from chemical to thermal energy in the boiler, conversion of thermal energy to mechanical energy in the turbine, and conversion of mechanical energy to electrical energy in the generator. We discussed efficiency and what "losses" occur in each energy conversion process and I described some of the ways we try to reduce our losses and, thereby improve our efficiency. I explained that by improving efficiency, we burn less fossil fuels, or require fewer solar cells (depending on technology used) to provide the KWH needed. We used several formulas such as $E=P*t$ & $V=I*R$ in the presentation.

Most importantly, I encouraged them to do well in science and mathematics so they can become engineers and scientists and help us become more efficient and find better ways to provide electrical energy.

Their class website is at <http://sessums.mysdhc.org/teacher/3922casey/>

I used an online model of a power generator available at the following site in the presentation

<http://www.tampaelectric.com/community/education/electricitycreated/>

I also used a AA battery and lamp to describe the process of converting chemical energy in battery to electrical energy, "distributing" the energy to the lamp, and then using the energy in the lamp. We converted the electrical energy to light and heat in the light bulb for use.

The presentation was well received and there were many good questions by the students. I left an assortment of literature and some battery holders, lamp sockets, lamps, and volt meters with the class teacher, Ms. Casey in hopes they can use these in their discussion of energy.

I was very impressed by the interest and questions that the students presented and I appreciate the opportunity to discuss current engineering issues with the classes. I would like to thank Ms. Casey and Ms. Lewis for the warm reception I received and the opportunity to show their students what a great profession the areas of engineering and science can be.

*Best regards,
Tom Blair*



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December 2010 Calendar of Events (For more information see P. 1) *inside this Signal...*

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|-----------------------------------|---|-----------|--|--------|---|
| 29 | 30 | 31 | 1 | 2 | 3 | 4 |
| 5 | 6 <i>EMBS Seminar, see page 4</i> | 7 <i>EXCOM Meeting at TECO Hall, see page 1</i> | 8 | 9 <i>Plasma Therm Tour, see page 6</i> | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 <i>No RAS Meeting Scheduled</i> | 22 | 23 | 24 | 25  |
| 26 | 27 | 28 | 29 | 30 | 31 | 1  |