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THE

SUNCOAST

SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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August 2005

Grounding & National Electrical Code Seminar



In a joint partnership with IAEI (International Association of Electrical Inspectors), your local IEEE PES/IAS Chapter is offering this 8 hour seminar on grounding and the 2005 NEC.

Date: Saturday, August 06, 2005; 8:10 am prompt
Speaker: Mr. Jim Pauley, Schneider Electric/Square D
Location: Harbor View_Center, 300 Cleveland St.
Clearwater, FL 33755
Cost: \$110 Members, \$125 Non-Members,
Student Member fee TBD
PDH 8 PDH credits will be offered.
RSVP: <http://www.ewh.ieee.org/r3/floridawc/>
Checks payable to: IEEE FWCS. Mail checks to:
Ralph Painter, IEEE FWCS Treasurer
648 Timber Pond Drive, Brandon, FL 33510-2937
Questions: Tom Blair at 813-228-1111, ext 34407 or
thblair@tecoenergy.com

Mr. Jim Pauley of Schneider Electric/Square D will be the speaker for the grounding and NEC seminar. Jim started out in his working life as an electrical helper, progressing to journeyman electrician, master electrician, and then admirably completing an Electrical Engineering University curriculum thus entitling him to proudly become and maintain a Professional Engineer (P.E.) status in the electrical industry. His primary function for Schneider Electric is as world wide codes liaison. He is active in NECODE CMPs and the NECODE Technical Correlating Committee which compile the NECODE.

Jim has been a frequent visitor to and contributor to Florida Chapter IAEI activities. Expect Jim to reveal intricacies of grounding as well as some of the engineering eloquence inherent in the subject. Be prepared to be enthralled by Jim's expertise. Be prepared to be dazzled by his well versed understanding of the ins and outs of the NECODE. Be prepared to learn something about grounding and the code that you did not know when you walked into the room

The location for this seminar overlooks the new high bridge to Clearwater Beach and the north side of Clearwater Harbor. The Harbor View/ Stein Mart Building is the last building on the right on Cleveland Street before going out to Clearwater

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From the Section Chair—Angela Alexander

Have you ever thought that you'd like to become more active in your local IEEE section? Membership is what you make of it, and volunteering can bring your membership experience to a new level.

There are several areas where volunteers are needed. From writing an article for the signal to organizing a tutorial, the opportunities are many. The best way to find out where help is needed is to attend a meeting of the Executive Committee (EXCOM). Meetings are usually the first Tuesday of the month, and details are available on the website. For example, the new GOLD (Graduates of the Last Decade) Chair is looking for people interested in becoming active in the group. If you're a recent graduate and would like to improve your networking skills, contact Kristy at kbaksh@ieee.org.

Many thanks to those of you who already volunteer your time and effort. Without commitments like that, our Section wouldn't be what it is.

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Upcoming PES/IAS Meetings/Seminars

Look for upcoming Signals for more Information related to the following meetings and Seminars:

Series of Power Transmission Planning meetings and seminars. This program will start during the last quarter 2005 and continued until the first quarter of 2006.

Tour of Hillsborough County Garbage Burner Plant for month of September 2005.

Tour of GE Transformer plant in Bradenton for month of October 2005

Update on the Gulf Stream Gas Pipelines, Luncheon meeting at TECO Hall November 2005.

Your PES/IAS Chapter is continuously looking for suggestions for events and meetings that would be beneficial to our local members. If you have any suggestions or if your company would like to sponsor a meeting or tour, please contact Ghaff Khazami at gkhazami@megaway.com or Tom Blair at tom_blair@ieee.org

Florida Council IEEE 2005 Awards

Did you know that there are a wide range of awards offered by the IEEE for significant contributions by members? Three of these are the 2005 Florida Council Outstanding Service, Outstanding Engineer and Outstanding Engineer Educator awards. It's not too early to begin the process of selecting candidates. Think about your friends and associates.

Please begin the submission process for FCIEEE awards by emailing them to the address listed below by October 1, 2005.

Go to <http://ewh.ieee.org/r3/fc/awards.htm> to get additional information, the electronic forms and instructions to submit candidates for these awards.

A list of past award recipients for your reference is available on the same website. Many of these awardees, could be a candidate for a different award, so please review it. Also, many sections have been overlooking past section officers as possible award candidates. Serving as a section/chapter officer within Region 3 is also serving the Region.

The FCIEEE awards are among the most important functions of the council. Let's be sure that FWCS is represented; we have some very active members who certainly would be strong candidates.

Check out the URL listed above or contact our Awards Chair, Richard Beatie at r.beatie@ieee.org




Hold the Date!

The IEEE FWCS invites you to tour the General Electric Transformer Repair Facility in Palmetto Tuesday, Sept 20, 2005 at 6:00 PM. Look for details next month.

Membership Reasons

IEEE journals and magazines are the most highly cited periodicals in their respective fields.

Tell your friends why you belong to the  IEEE

IEEE GOLD

Attention all recent graduates!! Are you a *Graduate Of the Last Decade?* Are you wondering about ways to increase your professional network and become involved in a professional society? IEEE GOLD is for you! It caters to all recent graduates, providing an excellent stepping-stone into the professional world as an eager entry-level engineer.

The Florida West Coast section is most pleased to announce their G.O.L.D section has just been re-activated! Don't forget to look for us in the Signal where we hope to soon present our calendar of events. If you would like to become involved with the chapter or have any questions or comments please contact us at: goldfwcs@gmail.com. —KB

Editor's Column

This month we start a continuing mini-feature called Member Reasons. We want to support the IEEE and encourage new and continuing membership. Throughout each issue there will be brief reasons to be a member. Please show them to your friends and colleagues to help them see what they would gain. — The first one is at the right below.

Also send me your reasons and I will print them. paulschn@ieee.org. —PS



(Continued from page 1.)

Beach. Free parking facilities are to the west and north of the building. The building entrance is at the SW corner on the west side of the building. Registration will be from 7:15am to 8:10am. The meeting will begin at 8:10am promptly.

Seminar Schedule

7:15-8:10am	Registration & Contl. Breakfast.
8:10 - 9:50am	Grounding/NEC Seminar.
9:50 - 10:05am	Coffee break
10:05 - Noon	Grounding/NEC Seminar Ct'd.
Noon - 1:00pm	Salad/sandwich buffet luncheon.
1:00 - 2:50pm	Grounding/NEC Seminar Ct'd.
2:50 - 3:05pm	Coffee/soda break.
3:05 - 5:00pm	Grounding/NEC Seminar Ct'd.

Staying In Touch—The IEEE FWCS Way – Jim Anderson, FWCS Vice Chair & Web Master

Charles Dickens said “... it was the best of times, it was the worst of times...” This phrase still rings true today, especially when it comes to talking about email. It goes without saying that email is a critical communication tool of the 21st Century. The old way of writing a letter or memo, perhaps duplicating a copy for everyone who needed to see it, and then delivering it by hand, the mail cart, or via the post office just seems so quaint these days. We have come to expect same day responses when we send an email – if we don’t get a quick response, we’ll often call to see what’s wrong!

The downside of email has become especially apparent in the past few years: spam, phishing, and unwanted offers choke our email boxes every day. If you were ever actually searching for a way to refinance your house, regrow hair, fix your credit, or help a disposed leader in Nigeria smuggle money out of the country (for a 20% cut, of course), then you would have little to complain about – unsolicited email would keep you entertained for hours. For the rest of us, it is often hard to find the emails that matter among the constant clutter of offers, come-ons, and scams that arrive via email every day.

The IEEE’s FWCS Section has over 2,300 members. That is a lot of people to stay in touch with, no matter how you look at it. In order to simplify the process of having your IEEE Section be able to get information to you, the IEEE has made available to us their LISTSERV email distribution tool. LISTSERV is an e-mail list management software that offers a variety of types of mailing lists – and makes life easy for me by providing a web interface for simple list administration. The IEEE switched to LISTSERV from an older product called MAJORDOMO because LISTSERV provided quicker message delivery. Switching to LISTSERV also solved two other critical problems: (1) mail looping between mailing lists and recipients, and (2) open lists exploitation by spammers. These days any spam that gets sent to the FWCS mailing list has to go through me first – and I kill it before it can get to your inbox.

We currently have 878 subscribers to the FWCS-Section

Richard Beatie Honored

At the July 12, 2005 meeting of the FWCS ExCom, Richard Edward Harold Beatie was named the PES Chapter Outstanding Engineer for 2005 by the IEEE Power Engineering Society Florida West Coast Chapter.. Richard was recognized for his “Many Years Of Dedication and Devoted Service to the Chapter and Its Members.



Angela Alexander, FWCS Chair, and Tom Blair, Vice-Chair of the PES Chapter and section Membership Chair, flank Richard at the presentation.

mailing list. That’s just 38% of our members. It’s actually very easy to sign up in order to keep in touch with all the section activities. Simply send an e-mail message to listserv@listserv.ieee.org and in the body of the email place the command:

```
subscribe fwcs-section your_email_address
```

You can put whatever you want on the subject line because it will be ignored. If you move or want to switch the delivery of IEEE FWCS information to a different email address, simply send another email but this time in the body of the email place the command:

```
unsubscribe fwcs-section your_email_address
```

That’s all there is to it! If you have not already joined up, then I’ll be looking to see your email address added to the IEEE FWCS email list – yet another great feature of your IEEE membership!

Visit the Bay News 9 Studios



Date: August 30, 2005 **Time:** 10:00 AM
Location: 700 Carillon Parkway, Suite 9, St. Petersburg, FL, 33716
Cost: FREE (space limited to first 20)
RSVP: Online at: <http://www.ewh.ieee.org/r3/floridawc/>
Questions: Tom Blair at 813-228-1111, ext 34407 or thblair@tecoenergy.com

IEEE invites you to tour the brand new, *state of the art*, studio facilities of BayNews 9.

Bay News 9 launched on September 24, 1997, with 82 employees, operating in what was then considered an advanced facility in Pinellas Park. Almost eight years later, Bay News 9 has outgrown the Pinellas Park studios, bringing about the need for a new, larger base of operations. Bay News 9's new facility, located in St. Petersburg's Carillon complex, includes four studios, two fully functional control rooms, non-linear editing, a central server, exciting new sets -- including the new and improved sports den -- and new systems that will make the building safer for employees and ensure uninterrupted coverage of major stories like hurricanes.

Bay News 9 shares the Carillon facility with several business units of Bright House Networks, the news channel's parent company.

"Bright House Networks is thrilled Bay News 9 is

moving into our building in Carillon," Bright House Networks Division President Kevin Hyman said of the news channel's relocation. "Bay News 9's new state-of-the-art facility will continue to offer Bright House Networks' customers the best severe weather coverage and up-to-the-minute breaking news information they've come to expect from this local news leader."


Come join us for a very educational experience.



Chief Meteorologist Alan Winfield tests out the new equipment in the Weather Center.

Membership Reasons

Use IEEE Career & Employment Resources to secure your next employment opportunity or enhance your current situation. The IEEE Job Site lets search job postings, post your resume, and learn more about companies looking for innovators like you. The IEEE Job site is <http://www.ieee.org/jobs>.

Tell your friends why you belong to the 



Jeremy Ludes – Student Branch VP (Ext) – was the chief cook for the event – and did an outstanding job of keeping us all fed



Aaron Metzger, Student Branch President speaks to the attendees.



ASME Student Chapter Chair Joseph Chouefati got a chance to enjoy the festivities



Davina and Robert Reid, and David and Carol Figueroa

Students Have Another Outstanding Picnic

The IEEE Summer Picnic held on Saturday June 25 by the USF Student Branch was a great success. The weather was questionable in the morning, but it turned out to be a beautiful day with no rain. My thanks those of you who found time to attend our picnic/cookout.

Over 25 people RSVP'd and well over that amount showed up. We had cooked more than 60 hamburgers and over 30 hot dogs and had to make a second trip for more food.

We had horseshoes, volleyball, Frisbee, and canoe races. This picnic seemed to have a larger turnout than the past two picnics that the student branch has run.

The American Society of Mechanical Engineers(ASME) also showed up for our picnic and we discussed some ideas for a few joint projects in the future. This would give both mechanical and electrical students more understanding in the other field.

A special thanks goes out to all the members, their spouses, and the FWCS Officers who joined us at this Summer's picnic – we look forward to having even more attend these special events in the future.

We are currently planning our next picnic which will be held around October. If you have any suggestions or ideas for the Fall Picnic contact ieeee@eng.usf.edu. Hope to see you all there at our next IEEE Fall Picnic.—Jonathan Wells



Several members of the FWCS enjoy the picnic with their spouses



We were easy to spot with our Banner hanging high to announce our location



Jeff Burnett (right), Student Branch SPAC Chair, and Jim Anderson, FWCS Vice Chair enjoy the food and conversation at the picnic



From left: Maged Guirguis - ASME Member, Chris Tuggle - Vice Chair ASME Student Section, Joseph Chouefati - ASME I-R Chair



Rocky Illen – Student Branch Treasurer plays frisby at the picnic

Brain Teaser Challenge

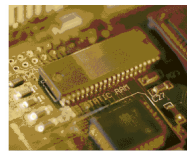
Column—By Butch Shadwell

July BTC In last month's home made speed and distance calculator, "... planning to measure the time between successive pulses from a speed sensor to calculate speed, i.e. any two successive pulses could be used for a speed calculation. If his speed sensor is generating 2000 pulses per mile, and he wants to have 1% accuracy from 5 to 120 mph, what is the minimum number of bits needed for this interval timer and what clock rate is needed?"

First we calculate the pulse rate at 120 mph, which is 66.7 pulses per second. This converts to 0.015 seconds per pulse. To achieve +/- 1% precision we must measure this time period with at least 100 counts of resolution. So our timer must count at the rate of 0.015/100 seconds per count, or 150 μ S per count. Now that we know the count rate for our timer, we go the 5 mph calculation. At 5 mph the pulse period is 0.36 seconds. The number of timer counts between pulses is $0.36/(150 \times 10^{-6})$ which equals 2400 counts. 11 bits goes to 2048 counts, which is a little shy of our need, so it is clear we need a 12 bit timer running at 6.67 KHz to measure speed precisely through the entire range. You will note that with these specs, the precision of our speed measurement drops quickly above 120 mph. If you plan on going faster than this you better use a faster count rate and more bits. But I bet you already knew that. For extra credit, can you calculate at what speed this system fails completely as you slow down below 5 mph?

August BTC Tony Redunzo loved to dance. Every Saturday night he would get dressed up and with every hair precisely positioned, he would head out to the dance clubs. This was his world. As he made his rounds from one club to the next, he would smile to himself, because in his world he was somebody...he was the king. There was never a question, as he approached the entrance of the next hot club, whether the door men would admit him or not. While all of the other riff-raff waited and hoped, Tony was welcomed in immediately. Yes, every Saturday night Tony was in his own world, and it was good.

Keeping his crown depended on one thing though. In order for Tony to continue to enjoy his celebrity, he had to take on any challenger on the dance floor and successfully defend his position as the top dancer. Though his confidence remained high, he knew that someday there would be a challenger that would be a little better, and all he had built would come to an end. He needed an edge to delay that eventuality.



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Suddenly it came to him, special shoes with a raster scan LED array on the sole, could be just the edge he needed! He envisioned a system with a vertical row of 8 LEDs, starting at the toe of the sole of his shoe toward the heel, that would spell out words in the air as he swung his leg from his left to his right. Of course this meant coming up with dance moves that would enable him to swing his leg high enough for folks to see these LEDs at a constant rate of travel. The letters would be formed by LEDs flashing on briefly so that dots appear in the travel of his foot. The vertical spacing of these dots is 1/4" due to the mounting on the shoe. Horizontal spacing is a function of the flash rate vs the rate of movement of Tony's foot around the arc. If Tony's extended leg is 34" long and he swings it at 2 seconds per revolution, what flash rate will give you the same horizontal pixel resolution as the vertical for the raster display on this cylinder? Boy...that Tony is some dancer!

Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. (<http://www.shadtechserv.com>) The names of correct respondents may be mentioned in the solution.

August 2005 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2 <i>5:30PM:</i> <i>IEEE FWCS</i> <i>ExCom Meet'g,</i> <i>TECO Hall,</i> <i>Tampa</i>	3	4	5	6 <i>7:15 AM:</i> <i>Grounding &</i> <i>NEC Seminar,</i> <i>Harbor View Ctr.,</i> <i>Clearwater</i>
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25 <i>6 AM: PE/IA</i> <i>ExCom Meeting</i> <i>Village Inn,</i> <i>Tampa</i>	26	27
28	29	30 <i>10 AM:</i> <i>Bay News 9</i> <i>Studios Visit,</i> <i>St. Petersburg</i>	31			

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