Power System & Substation Grounding Seminar

Sponsored by
The IEEE Power Engineering Society
Florida Electric Cooperatives Association

Four professional development hours will be awarded for completion of the seminar. Florida Provider Number EXP00015

Speaker: Ghaff Khazami, P.E.
Chair. PES/IAS FWCS
MEGAWAY, Inc. Consulting Engineers

Date: June 9, 2005

Time:
8:00 AM – 8:30 AM
Registration and continental breakfast Seminar
8:30 AM – 2:15 PM with a one hour break for lunch (not provided)

Location:
Sheraton Sand Key, 1160 Gulf Blvd.,
Clearwater, FL.
Phone: (727)-595-1611

Cost:
Members $75, Non-members $100 (Prices were incorrectly listed in May Signal) Company name, attendee’s name, & PE license number (if applicable), must be provided along with payment

Registration:
Register with FECA (Registration Form on Page 5)

Registration must be paid in advance. Send checks payable to FECA to:
Raymond G. Trusik, Florida Electric Cooperatives Association, Inc.
2916 Apalachee Parkway, Tallahassee, FL 32301

For more information please contact Art Nordlinger 813-630-6203 or email a.nordlinger@tecoenergy.com

Directions to hotel: Take I-75 or I-4 to I-275 to Memorial Hwy/ State Road 60 West. Take SR60 West across the Courtney Campbell Causeway, through Clearwater and across the Memorial Causeway to Gulf Blvd.
IEEE-USA Applauds House Plans for Innovation Summit

WASHINGTON (12 May 2005) IEEE-USA applauds Reps. Frank Wolf (R-Va.), Sherwood Boehlert (R-N.Y.) and Vern Ehlers (R-Mich.) for announcing plans for an Innovation Summit this fall.

"We congratulate these members of Congress for recognizing the importance of innovation and technology to our nation's continuing economic well-being and national security," IEEE-USA President Gerard A. Alphonse said. "There's an urgent need to convene key stakeholders from all sectors to better understand the challenges to U.S. high-tech innovation and propose solutions we can all work on together."

IEEE-USA is an organizational unit of the IEEE. It was created in 1973 to advance the public good and promote the careers and public policy interests of the more than 220,000 technology professionals who are U.S. members of the IEEE.

Six FWCS Members Elevated to IEEE Senior Membership in April

The following Six Florida West Coast Section Members were recently elevated from Full Membership to Senior Membership: Jacob Chacko, Marion H. Cooper, Lawrence T. Hersh, Joseph Mitola III, Sudeep Sarkar, James W. Wall. Heartly Congratulations and many thanks for your years of service to the engineering profession!! For questions regarding the IEEE Senior Membership Program, please contact Tom Blair tom_blair@ieee.org.

Upcoming PES/IAS Meetings

Your local PES/IAS Chapter is currently working on several upcoming events. We are working on arranging a training seminar on the 2004 NFPA 70E and Electrical Safety. Details are being finalized now and will be announced in the next Signal newsletter.

We are also working with General Electric on arranging a tour of their transformer repair facility in Manatee county. More details will be announced in the next Signal newsletter.

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.
IEEE-FWCS Section Meeting

Robotic Technologies for Urban Search and Rescue

**Date/Time:** 27th June 2005 at 11:30 AM  
**Location:** TECO Hall, 702 N. Franklin Street, Tampa  
**Food:** Lasagna with salad and dessert  
**Cost:** $10 members, $15 non-members, $5 students

**Topic:** Various search and rescue technologies using robots will be presented by Mr. Matt Long of Center for Robot-Assisted Search and Rescue. Also new sensors technologies, current limitation of technology and main applications of technology to search and rescue in the emergency rescue, medical reachback and chem./bio areas will be discussed. Mr. Long will have a robot for show-and-tell.

**Biography:** Matt Long is a Ph.D. candidate in Robotics at the University of South Florida (USF). He earned his B.S. in Mathematics and Computer Science 1998 from the Colorado School of Mines and his M.S. in Computer Science from USF in 2004 for creating a distributed architecture for teams of heterogeneous robots. This architecture is in use on a number of platforms at USF. He has done prior work in sensor fault tolerance for unmanned systems and is a volunteer with the Center for Robot-Assisted Search and Rescue (CRASAR). His research interests include distributed robotics and computing, software agents, and computational intelligence.

**Reservations:** Make reservations on line: http://www.weiquality.com/fwcs-meetings/ or call Quang Tang at (813) 739-1222. June 22nd is last day to make reservations.

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It’s been a great ride!!

*By Srinivas Katkourri*

Time flies!! It has already been close to two years, since I have taken over as the Signal Editor. When I volunteered my time to edit the Signal, I underestimated the amount of work required to maintain the high quality standards that my predecessor, Quang Tang, had set. In general, I also underestimated the job of an editor. After serving as the Signal editor, I have a new found respect to the editorial job. Being Signal editor, taught me several lessons, the important one being: an editor must be able and efficient in several ways – to précis a long-winding article into a short-and-crisp one without losing the author’s purpose, to transform every article into one with aesthetically good looks, to proof-read every article carefully, no matter how boring or interesting it is, to nag people about their timely contributions, and finally to save, save, and save the valuable space.

It was a smooth transition; I inherited a few past Signal articles from Quang. I started using them as templates. I am amazed to see how well Microsoft Word can be used to produce a newsletter! Prior to this, I had little experience with Word and, frankly, was not looking forward to work with Word! To my surprise, Microsoft Word has evolved indeed! It has been a pleasant experience, drawing tables, boxes, and editing images, etc.

It was a great pleasure formatting (and reading at the same time) Brain Teaser Column challenges. This column has renewed my interest to look at fundamentals of electronics. Once talking to Butch about his column, he remarked that the sole purpose of the column is to keep engineers in touch with the fundamentals that they have learnt way back in school but are no longer applying them in their daily work. The only regret I have is that the editor is not being able to match each column with an appropriate clipart. Butch does great story-telling, and I wanted to match it with a picture! Hopefully, Paul can (and want to?) do this.

Volunteering as Signal Editor has paid off for me! While editing Signal, I enjoyed the articles, I learnt new stuff, I made a lot of friends...what else can I ask for? If you have not already done so, volunteer your time to IEEE. You will get handsome rewards for your time.

I thank IEEE FWCS for providing this wonderful opportunity. In particular, John Conrad, Jim Howard, Jim Anderson, Quang Tang, Tom Blair, Richard Beatie, Art Nordlinger, and Jim Beall. I also thank Mr. Paul Schnitzler (see Page 5 for his brief biography) for stepping forward to be the next Signal Editor. Paul brings a lot of editorial experience to the job. To start the transition, last month’s Signal was co-edited by Paul and me. In one afternoon, from Paul I have learnt more tricks in Word than I ever did in past 10 years!! I keenly look forward to reading his editions of Signal. Now, I take off on my Sabbatical leave...So long!!
Joint Meeting: IEEE Computer Society/AESS and PL-UG

Digital Hardware Design Topic: High-Speed Memory Interface with Xilinx Virtex-4 FPGA Devices

Date/Time: Wednesday, 15th June 2005
6:00 PM to 7:30 PM
Speaker: Mark Graham
Location: Avnet Electronics Marketing
380 Park Place, Suite 170
Clearwater, FL 33759
RSVP: www.weiquality.com/fwcs-meetings/

Open Meeting. Students and Non-members Welcome!!

Mark will explain the high-speed memory interface solutions that Xilinx offers and will review some of the challenges associated with modern memory interfaces. He will also discuss some details of source-synchronous design techniques and explain the Virtex-4 I/O enhancements which simplify memory interfaces including the ChipSync, Xesium, and SmartRAM features. There will be an introduction of the Memory Interface Generator (MIG) software tool and a demonstration of a design example utilizing the Xilinx ML461 reference board.

Avnet will provide Complementary pizza and cold drinks.

Directions: The Avnet local office is between SR60 (Gulf-to-Bay) and Drew Street, just east of US19 (a few hundred yards behind Bennigan's). To get there from the west, go east on SR60. Turn left (north) at the second light after the US19 overpass (Park Place). Take your second left after the light (North Park Place in complex). The tan 3 story building will be a couple hundred yards ahead on the right side. Avnet’s number is 727-507-5000. Your Avnet host is Ben Harding (727-510-5325)

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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
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. 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. He 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.
SUBSTATIONS COMMITTEE ANNUAL MEETING REPORT

By Tom Blair

The Florida West Coast Section hosted the 2005 Annual Substations Committee Conference in April and it was a great success. There were three technical tutorials and a technical tour held for the event. It would not have been possible without the support of our sponsors:

- Tampa Electric Company
- Engineer Sales Company
- Areva T&D
- Newton-Evans
- Commonwealth Associates
- Electric Sales Associates
- General Electric
- Dymec

Many thanks to the volunteers who dedicated their time and efforts to help with the annual conference. For more details please go to the PES Substations Committee Web Site at: http://www.ap-concepts.com/ieee_substations_org.htm

The PES Substation Committee is comprised of six distinct sub-committees, which create working groups to continually update the IEEE standards publications. These subcommittees cover various specific areas of interest. Some of the subcommittees involved include the following:

- Data Acquisition, Processing and Control Systems (“C” groups), also meet annually with the Power Systems Relay Committee (PSRC)
- Transmission and Distribution Substations (“D” groups)
- West Coast Interests (“F” groups)
- Environmental Issues (“G” groups)
- High Voltage Power Electronics (“I” groups)
- Gas Insulated Substation (“K” groups)
Dr. Paul Schnitzler – New Signal Editor

Paul Schnitzler, Ph.D. (E.E.), SLM, has extensive senior level experience in the electronics field including work with both large and small-or-startup companies.

Paul has developed products in wire, wireless, and fiber telecommunications; video systems including cameras and plasma display panels; and software in education, medical, database, and embedded applications. These were accomplished at Bell Laboratories, RCA Corporation, the Time Inc. Magazine Company, Cadence Design Systems, and a variety of smaller companies. Currently, he is an engineering and management consultant as well as Senior Director, Systems, for Deep Sea Link, Inc. a special applications telecommunications company.

He has taught courses in engineering, management, marketing, and creativity for New York University, Drexel University, Fairleigh Dickenson University, Middlesex County College, RCA, Bell Laboratories, Cadence Design Systems, and the IEEE, and is a Professor on the faculty of the Graduate Management School at Northwestern Polytechnic University. He recently taught an invited seminar in Entrepreneurship at Fudan University in Shanghai, China.

Paul earned his Ph.D. (E.E.) from the Polytechnic University of New York and the B.S. and M.S. in E.E. from New York University. He received the RCA Laboratories' Doctoral Study award and the Hugo Gernsbach Award, was elected to Sigma Xi, and is listed in Marquis Who’s Who in the World. Paul holds several patents and has published over twenty papers in circuit design, microwaves, television, and telecommunications. He has been a member of the IEEE since his student days.

Paul’s website is [http://www.paulschnitzler.com](http://www.paulschnitzler.com) and he may be reached at paulschn@ieee.org.

Registration Form

FECA Sponsored Power System & Substation Grounding Seminar
March 9, 2005 – 8:30 am – 2:15 pm
Sheraton Sand Key Beach Resort
Clearwater, FL

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<tr>
<th>Name of Company</th>
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<tr>
<td>Number of non-IEEE members attending the June 9 IEEE seminar @ $100 each:</td>
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<tr>
<td>Number of IEEE members attending @ $75 each</td>
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Persons Attending (please list Name as it appears on the PE License, PE License # and/or IEEE Member #):

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<tr>
<th>NAME(s)</th>
<th>PE License #</th>
<th>IEEE Membership Number</th>
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Prepared by:_____________________________Phone #_____________________

Please fax registration form and mail a check for registrations payable to FECA. All registration fees must be prepaid in order to attend the conference.

Mail to: Raymond G. Trusik
Florida Electric Cooperatives Association, Inc.
2916 Apalachee Parkway
Tallahassee, Florida 32301
Fax to: (850) 656-5485

Hotel Information

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<th>Sheraton Sand Key Resort</th>
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<tr>
<td>1160 Gulf Blvd.</td>
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<tr>
<td>Clearwater, FL 33767</td>
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<td>Telephone 727-595-1611</td>
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<td>Cut off Date May 8, 2005</td>
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Mention that you are with FECA for the group room rate of $139 per night single or double. Room rate increases to $159 per night after 5/8/05. Please cancel within 72 hours of arrival in order to avoid a penalty of one night room fee plus tax.
Siliconexion offers robust, on-time electronic design consulting services by experienced senior level professionals.

Applications Include:
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Students’ Corner
IEEE Student Branch
With finals over the students at USF will get a well earned summer break. Of those students who earned it, I think Kristy Baksh has worked exceptionally hard for it. She has completed her semester, her finals, her senior year, and with this her presidency of the IEEE USF student branch. She did a great job, as the new president I would like to thank her and all her staff. The new staff and I know we have big shoes to fill, and look forward to doing so. The new USF officers are as follows:

<table>
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<th>Name</th>
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<tr>
<td>Aaron Meltzer</td>
<td>President</td>
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<tr>
<td>John Wells</td>
<td>Vice President Internal</td>
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<tr>
<td>Jeremy Ludes</td>
<td>Vice President External</td>
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<tr>
<td>Rocky Ilen</td>
<td>Treasurer</td>
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<tr>
<td>Andrew Quecan</td>
<td>Secretary</td>
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We are all looking forward to a fun and interesting year. To start it off we have a picnic on Saturday June 25th from 10am – 3pm. We are going to be doing a ropes course this year, so all of you engineers that think you can pit your climbing and balancing prowess against that of the students, let’s see it. For more information contact me or John Wells at IEEE@eng.usf.edu. Once again we are excited about this next year, and will do our best to increase student involvement and maintain the level of activity we now have. Thanks again to the graduating staff.

Brain Teaser Challenge Column
By Butch Shadwell

May BTC  Last month’s shocking tale involved, “... pulse(ing) an auto ignition coil to generate the annoying electric shock to the unwanted marauders. I wanted to protect the switching transistor from potentially very high currents if it should stay on too long. What common electrical device from a car when placed in series with the coil primary and the transistor, would allow a high inrush current to saturate the coil quickly and then limit the current to a safe level after a very short while? HINT- This is a very inexpensive two lead component with no semi-conductors.”

Several respondents suggested a capacitor, but it would take a huge, and quite expensive, capacitor to supply enough charge to saturate an auto spark coil. The correct answer was a light bulb. The starting resistance of a 25 Watt bulb would allow very high current to flow to the coil for a quick build up of field, but after a few milliseconds the filament would rise in temperature and in resistance, limiting the longer term current flow to about 2 Amps max. Congrats to all of you who got this one!! This is engineering from the old school.

June BTC  Norman loved pigeons. Hanging around the city park and throwing food to the aggressive birds was his favorite type of outing. He would practice little tricks with them. They seemed to enjoy cooperating when Norman would put a little corn on his tongue and let the birds come and peck it away. Hours would pass as he experimented with his winged friends in this manner.

At the end of every day he used to wonder where his friends went. Thousands of pigeons seemed to just vanish when night came. Norman had heard that pigeons have a small magnet in their heads that helps them navigate by the earth’s magnetic field. He decided to try to measure this field. Short of trying to stick a paperclip to a pigeon’s head, what technology could he use? Since he must subtract the earth’s magnetic field from this measurement, just how strong is the earth’s field in most places?

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.
## June 2005 Calendar of Events

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<thead>
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<th>Sunday</th>
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<td>5:30PM: IEEE FWCS ExCom Meeting, TECO Hall, Tampa</td>
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<td>12</td>
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<td>14</td>
<td>15 6PM-7:30 PM IEECES/AESS/PL UG: High Speed Memory Interface with Virtex FPGAs, Clearwater</td>
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<td>25 10AM-3PM: IEEE Student Branch Picnic</td>
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<td>26</td>
<td>27 11:30AM: IEEE FWCS Section Mtg, Robotic Technologies, TECO Hall</td>
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Institute of Electrical and Electronics Engineers, Inc.  
Florida West Coast Section  
3133 W. Paris  
Tampa, Florida 33614

Sections Congress 2005 is coming to Tampa!

DATE SENSITIVE MATERIAL. DO NOT DELAY

Or send address changes including your name, IEEE Member number and all pertinent information to:  
IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333  
Or fax your address changes to (732) 562-5445