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www.Tryengineering.org



TOUR OF THE HILLSBOROUGH COUNTY RESOURCE RECOVERY FACILITY

Date: July 25, 2006
Time: 4 - 6:00 PM
Location: 350 N. Falkenburg Rd.
Tampa, FL 33619
Cost: FREE (space limited to first 25)

RSVP: <http://www.ieee.org/fwcs>
Questions: Art Nordlinger 813-630-6203
a.nordlinger@ieee.org;
Ghaff Khazami 813 960 0990
gkhazami@megaway.com

NOTE: Everyone will be required to sign a release. Therefore, all participants must sign in upon arrival.

The Hillsborough County Resource Recovery Facility began commercial operation in October 1987. The facility processes 1,200 tons-per-day of solid waste while generating up to 29 megawatts of renewable energy that is sold to Tampa Electric. The facility is owned by Hillsborough County, which supplies all the waste. Covanta Energy operates the facility for the County. This facility uses secondary sewer treatment effluent from the adjacent wastewater treatment plant for part of its process water. Installation of new emissions control equipment to comply with Clean Air Act amendments was completed on August 25, 2000.

Directions:

(From S.R. 60) Turn North on Falkenburg Road which is the first traffic light West of the I-75 interchange.

Proceed down Falkenburg Road crossing the railroad tracks and passing the Waste Water Treatment Plant and Animal Control Facility on your left.

The Hillsborough Facility will be visible on your left. Enter second driveway and proceed up the road on far right around the facility following visitor signs. Parking is available and visible once you circle facility.

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All material for THE SUNCOAST SIGNAL is due in electronic form by **1st Friday after the 1st Tuesday** of the month preceding the issue month.

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Editor's Column

I occasionally come back to the value of IEEE membership. The article on page 6 of this issue of the SunCoast Signal addresses several values beginning by looking at return on investment. The comments treat both financial gains and personal satisfaction, but then it moves on to the accessibility of resources to achieve these returns.

It quotes an article by Ralph W. Wyndrum Jr., IEEE-USA President, and summarizes several of his points in a question: how easy is it to get the help and information I need to advance my career? The IEEE provides a range of answers for both education and career activities. See page 6 and check out some of the links.

On another point of growing interest, see the news on Molecular and Cellular Imaging summarized on page 5. It may lead you to changes in technology that you need to know. —PS



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to meet group and individual needs. My engineering background of over 30 years qualifies me to understand engineers and to help them with their financial planning and investment needs. Note, health insurance is not a service of ISI. IEEE member since 1969.

LD20552-01/06



IEEE / IAS 41st Annual Meeting

October 8 - 12, 2006—Marriott Waterside Hotel—Tampa Florida

Greetings from the beautiful city on the bay!

IT'S HERE!!!

Just Added

Conference and Hotel Registration

We are open for business, register now!

Continuing Education Opportunities (tutorials)

This conference is aimed to the industry applications oriented engineer and engineers in academia interested in this arena. It should be of interest to many Section members.

The Preliminary Technical Session Schedule is coming to the web site soon.

See the web site www.ieee.org/ias2006



TISP News

Sean Denny sent this open letter on the current Teacher In-Service Program activities.*

“We had a good month in May. The Florida Engineering Education Conference was a big success. I met several interested educators at the Conference and sent a welcome packet [to each].

“[Tom Blair, Ralph Painter and I] have volunteered for an Ohm's Law Presentation for educator Wing Ying Kwong for Thursday, July 13th, 2006. We need a venue and possibly more educators who are interested in Ohm's Law, please? I think it would be great to do a "world series" of presentations that week as long as they are located in the same venue or school.

“Tom Blair and I will participate in the Professional Study Day on July 27th in Hillsborough County per special request. Nancy Marsh asked, "Are any of your fine volunteer engineers open on that day?" All Engineers are welcome to volunteer. “Pinellas Teachers are also welcome to participate in these activities.” —Sean Denny

[*The Editor apologizes for any errors.]



The Computer Society and AESS Hosted Carol Woody As a Distinguished Speaker

On May 17, we had the pleasure of having Carol Woody, PhD give a presentation on “Improving Software Operational Security – Plan for Security Risk in Development.”

Carol Woody is a senior member of the technical staff at the Software Engineering Institute (SEI) at Carnegie Mellon University. She researches ways to address software design and development that improve the security of the implemented results.

Twenty-five attendees meet at Johnny Carino’s Italian Restaurant in Tampa for a social hour and a great meal. There was much interest in Dr. Woody’s topic.

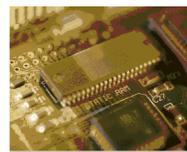
Her presentation described an approach to incorporating security into the software development life cycle. The focus was on appropriately identifying and evaluating security quality requirements based on anticipated operational risk. She emphasized clearly defined and testable security requirements as well as analysis techniques for evaluating operational risk within the development process. Dr. Woody also discussed approaches for mitigating unacceptable risk in advance of implementation.

Dr. Woody explained that security goals are often used as security requirements. For example, if you have software requirements like

- “The system will be secure”
- “Critical data must be kept confidential”
- “Only those authorized will be allowed to use the system”

then your system security will probably fall short.

If you would like a copy of the presentation, email Jim Lumia at JLumia@ieee.org.



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2007 NATIONAL ELECTRICAL SAFETY CODE AVAILABLE FOR ADVANCED ORDERS

The National Electric Safety Code (NESC(R)) has been updated and is now available for advance orders ahead of its on-sale date of 1 August 2006. The code, which is used throughout the United States and in more than 100 countries, offers practical guidance on how to safeguard employees and the public when electrical supply and communication lines are designed, installed, operated and maintained. It is updated every five years to reflect changes in the electrical and communications industries. The 2007 version includes new appendices on loading and conductor movement, extreme wind loading, and maximum over-voltage at a work site. Visit <http://standards.ieee.org/nesc/nescproducts.html> for more information.



WAMI Center

IEEE Wireless and Microwave Technology Conference “WAMICON 2006”

December 4 & 5, 2006—Marriott Suites Sand Key—Clearwater, FL

Invitation to Exhibit & Join Conference Sponsorship List

The 8th annual IEEE Wireless and Microwave Technology (WAMI) Conference will be held at beautiful Sand Key beach in Clearwater, FL on December 4-5, 2006. The conference will address up-to-date multidisciplinary research needs and interdisciplinary aspects of wireless and RF technology. The program includes oral presentations, poster presentations, workshops, and tutorials.

The steering committee would like to invite your company to become an exhibitor and/or sponsor of this exciting and high profile event. We can accommodate a limited number of 10' x 10' “pop-up” and table-top displays. The following options and sponsorship opportunities are offered:

	Event Dates	Sponsorship Level
Dinner	12/4	\$3000 (or 2 @\$1500)
Reception / Poster Session	12/4	\$1500*
Lunches	12/4 & 12/5	\$1250 each day
AM&PM Break Sponsors	12/4 & 12/5	\$550 each break
Meeting Rooms & A/V	12/4 & 12/5	\$350 per day
Exhibit Booth Space (~8x 10)	12/4 & 12/5	\$650
6' Table Top Display	12/4 & 12/5	\$450
General Sponsorship	12/4 & 12/5	\$350

Sponsors at the \$1000 level and above will receive a complimentary table-top exhibit space upon request. Exhibit space is limited; our suggestion is to reserve your space soon. Please email Alen Fejzuli afejzuli@rflabs.com and cc: Larry Dunleavy at l.dunleavy@ieee.org with your exhibit plans and requirements.

Booths will be reserved on a first paid/first served basis, please select 3 choices for exhibit location (see attached). Make checks payable to “IEEE WAMICON” and send to Attn: Ms. Gayla Montgomery, University of South Florida, 4202 E. Fowler Ave, ENB 118, Tampa, FL 33620. For credit card payment contact Alen Fejzuli for the form.

All sponsors and exhibitors will be acknowledged in multiple ways including on the conference website, on signs at conference events, and in other printed and electronic promotions and digests associated with the event. For a list of 2005 sponsors please see <http://ee.eng.usf.edu/WAMI/conferences/2005/sponsors-05.html>

Please, don't forget to register for the conference. Go to www.wamicon.org for more information as well as Conference Registration and Hotel Information:



Inside Molecular and Cellular Imaging

The FWCS includes many companies engaged in the medical device arena. Thus a recent issue of "IEEE Signal Processing Magazine" (v. 23, no. 3) may be of particular interest. An email from John R. Platt, IEEE Business Communications Manager, alerted us to the eight papers in the May issue that address the topic of molecular and cellular bioimaging. The first five articles examine fluorescence microscopy, while the next three focus on additional microscopy techniques. In their introduction, the issue's guest editors write, "We have an opportunity to

make a mark in a host of important problems by automating data collection and analysis, developing new algorithms for ever-more sophisticated acquisition methods, and providing statistically sound, automated answers to biological questions."

Abstracts for all articles in the issue can be found in the IEEE Xplore digital library, where subscribers will have full-text access to the publication. Visit: <http://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=34166>



Value of Membership: It's About Access

In the May 2006 issue of www.todaysengineer.org, Ralph W. Wyndrum Jr., IEEE-USA President, discusses the Value of Membership. He chose this topic because he has heard repeatedly “that Engineers are asking about the value—both monetary and otherwise—of being an IEEE member.” It is a piece worth reading and you can find it at <http://www.todaysengineer.org/2006/May/prezcolumn.asp>. Here are a few of his points.

Dr. Wyndrum observes that value can be thought of in terms of return on investment; some of these are continuing education programs, benefits, fast and useful online tools, professional literature, public awareness and advocacy.

“But another measurement ties all the others together, especially in these information-laden times. It’s not mentioned in so many words on the assessment breakdown, but it’s there. I’ll call it *Access*.

“Certainly membership dollars fuel the creation of vital products. But access is the switch that makes all this ‘wiring’ come to life for you. It’s the difference between your taking valuable time to track down courses on your own (and paying top fees for them), or taking advantage of such focused, affordable, mid-career training and other vital educational aids as Expert Now IEEE, the Education Partners Program, and Leadership for Results, to mention a mere few. If you’re not familiar with Expert Now IEEE, it’s a new and innovative tool that delivers the best IEEE educational offerings directly to your desktop. In a unique offering, U.S. members can try it now for free for a limited time, while earning CEUs. All you need is an Internet connection and an IEEE Web account to try it out. (Learn more [at www.ieee.org/web/education/secure/Expert_Now_IEEE/trials.html](http://www.ieee.org/web/education/secure/Expert_Now_IEEE/trials.html).)”

Dr. Wyndrum suggests that you plug into Career Navigator, Employment Navigator and the IEEE Job Site. Or look at eleven policy related committees and the Legislative Action Center. And how about the Innovation Institute (at <http://innovation.ieeeusa.org>), which teaches the top students “the principles and processes of innovation, with the ultimate goal of keeping this fresh thinking on U.S. soil, in U.S. jobs.”

Don’t know about some of these? Check out the links above and see how much the IEEE gives you!

IEEE-USA is an organizational unit of the Institute of Electrical and Electronics Engineers, Inc. created in 1973 to support the career and public policy interests of IEEE’s U.S. members. IEEE-USA’s mission as outlined in the IEEE Bylaws is to recommend policies and implement programs specifically intended to serve and benefit the members, the profession, and the public in the United States in appropriate professional areas of economic, ethical, legislative, social and technology policy concern. The vision is to serve the IEEE United States member by being the technical professional’s best resource for achieving life long career vitality and by providing an effective voice on policies that promote U.S. prosperity.

In the Merry Month of May

The month of May was a very busy time for the Florida West Coast Section.

There were two programs regarding NFPA: On Monday, May 15, Richard Mesker, Manager, Health & Safety, Sumter Electric Company and Douglas Mills, with Progress Energy of Florida made a great presentation on NFPA 70 and where and how they integrated this standard in their companies safe work practices. On the following day, John Leedy, President of Leedy Electric, gave a 4 hour seminar on NFPA 70E and attendees received 4 PDH credits for attendance.

Later on in the month, Tuesday, May 23, Lisa Watts and Bob Sinex with Corning Cable Systems along with Anixter presented an evening session on Fiber Optic Cable Fusion Splicing & Testing Methods. They brought with them several pieces of equipment for fiber cable splicing and testing and demonstrated these techniques.

The Florida West Coast Section is very grateful for the volunteers that continue to provide the local members with such great educational opportunities as well as the companies that support their participation in local IEEE activities. Thank you! —TB



IEEE-USA/AAAS Engineering Mass Media Fellows

For the first time, IEEE-USA is providing support for two IEEE graduate student members to serve 10-week summer internships as AAAS Science & Engineering Mass Media Fellows. They are: Charles Emrich, Ph.D. in biophysics at University of California/Berkeley; and Miriah Meyer, Ph.D. candidate in computer science at University of Utah/Salt Lake City. Each has secured a placement: Emrich at the "Sacramento Bee"; and Meyer at the "Chicago Tribune." The program serves to introduce engineers, scientists and mathematicians to a media assignment; improve public communications on science, technology and engineering; and promote technological literacy.

For more information on the IEEE-USA involvement in the 32-year-old AAAS program, go to: <http://bmsmail3.ieee.org:80/u/3250/126127> For specifics from the AAAS and how to apply go to <http://www.aaas.org/programs/education/MassMedia/> Note that the next appointments will be in 2007 and applications are not yet open.

Brain Teaser Challenge Column

—By Butch Shadwell

June BTC As I was getting ready for this season's hurricanes, I was wondering "...if my new generator uses 5 gallons of gasoline in 12 hours while driving 5000 watts of household loads, then what is my cost per kilowatt-hour for emergency electrical energy? For this calculation we will ignore the oil change costs and the depreciation of the system. Regular gas in my neighborhood is running about \$2.75 per gallon."

Due to the costs of maintaining an emergency generator, there is probably an economy of scale where there is some optimal number of neighbors who should buy a larger system and share the costs between them. I can already hear the arguments... "Why did you have so many lights on at your house, and how many TVs were you running? I think you need to pay more of the costs!" Things escalate and, before you know it, somebody gets their yard TP'd.

As for my generator, I decided to first calculate the number of gallons used per kilowatt-hour. 5 gallons divided by 12 hours equals 0.41 gallons per hour at 5000 watts. To get the fuel for 1 kilowatt-hour we divide this figure by 5, which equals 0.083 gallons. Multiplying this times the cost per gallon, and we have $0.083 \times \$2.75 = \0.23 per kilowatt-hour. This price seems high compared to my local public utility rate, but for emergency relief I think it is a bargain. But I bet you already knew that.

July BTC My favorite doughnut is blueberry filled. I suppose there could be an argument that blueberry filled doughnuts aren't really doughnuts at all. After all, they don't have a hole do they. In fact most of my favorite doughnut shop pastries don't have holes. There seems to be a major division in types of doughnuts, that being yeast versus cake batter doughnuts. These have much different textures and tastes, but in fact many examples of each may have holes.

I'm sure that the question on all of your minds now is, what about bagels? There's a hole, and bread dough with yeast, but they are baked and not cooked in grease. Is it a requirement that doughnuts be cooked in boiling oil? Yes! This is the key! All doughnuts must be cooked in grease.

IEEE and IBM Launch www.Tryengineering.Org In June

IEEE and IBM have collaborated to launch a new website that combines interactive activities with information on careers in engineering. TryEngineering.org is designed to educate a variety of audiences about the different engineering disciplines and the impact engineers have on society. Targeted toward teachers, school counselors, parents and students, TryEngineering.org lets site visitors explore how to prepare for an engineering career, ask designated experts engineer-related questions and play interactive games. Tools for teachers include lesson plans and engineering projects as well as a list of student competitions and science and engineering-oriented summer camps.

The site will be launched on 5 June with a searchable list of accredited engineering programs in the U.S. and Canada, and will be expanded to include programs in other English-speaking countries as well as Germany and France. For more information contact Doug Gorham, Educational Activities, at d.g.gorham@ieee.org or +1 732 562 5483 or Allison Ickowicz at a.m.ickowicz@ieee.org or +1 732 562 5496.



Then conversely, is every doughy object cooked in grease a doughnut? I'm afraid that this discussion has moved beyond the grasp of my meager mind. The philosophical points of perforated pastry will not be made plain in this piece.

All this talk of doughnuts has made me think of toroids. If a toroid is circular with an outside diameter of 5 cm and has a circular cross section that is 1 cm in diameter, what is the total volume inside of the toroid? I wonder what you get if you boil a magnetic toroid core in cooking oil? I'm pretty sure that whatever it is, it won't qualify as a doughnut.

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



July 2006 Calendar of Events (For more information see P. 1 *Inside this Signal...*)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	3	4 <i><u>Independence Day</u></i>	5	6	7	8
9	10	11 <i>5:30 pm:</i> <i>IEEE FWCS ExCom TECO Tampa</i>	12	13	14	15
16	17,	18	19	20	21	24
23	24	25 <i>4:00 pm:</i> <i>Resource Recovery Facility— Tampa p. 1</i>	26	27	28	29
30	1	2	3	4	5	6
<div style="border: 2px solid black; padding: 5px; background-color: #e0f7fa;"> As this is a quiet month, start thinking about the IEEE/IAS Annual Meeting in October (page 3) and WAMICON 2006 in December (page 5). </div>						

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IEEE/IAS Annual Meeting Oct. 2006 Tampa!

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