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THE

SUNCOAST

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This Month's Meetings

April 7th: EXCOM Meeting

Meeting starts at 5:30PM At TECO Plaza

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

***Meeting is open to all FWCS members
and guests***

Development of Renewable Energy Projects

April 17th 2009

Location: Tampa Electric, 702 N. Franklin Street, Tampa

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Life Members Seminar

April 18, 2009

Location: Red Lobster Restaurant

38th Street and 62nd Avenue, St Petersburg

See page 5

IEEE-RFID 2009, Orlando

Date: April 27-28, 2009

Location: Disney World, Orlando

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This could be your last Signal Newsletter!

Please be sure to renew your IEEE Membership

For additional benefits of IEEE membership, go to

http://www.ieee.org/web/volunteers/membership_dev/benefits.htm

Effective March 1st 2009 members who have not renewed their membership will be eliminated from the IEEE database of active members; therefore no mailing label for the Signal will be available for the mailing of the newsletter.



This Month... (Editor's Column)

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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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I am putting the final touches on the April Signal while watching the launch of the Space Shuttle on one of its final missions to the Space Station where it will add to the electrical generating capacity. It's hard to believe that the shuttle program has been in operation for more than 25 years and will soon be replaced with the Constellation program with the Aries/Orion vehicles. Interestingly, the Aries spacecraft is an upsized version of the Apollo spacecraft that was designed more than 40 years ago.

We have several events planned for this month. There is the monthly EXCOM meeting, Renewable Energy Projects Seminar, Life Members Seminar and the RFID event in Orlando.

Unfortunately, due to a schedule conflict, the speaker I was hoping to have last month will now happen in May. Philip Manteiga was in Haiti during that month and was unavailable.

Contributors for this month include Jim Anderson, the BTC from Butch Shadwell, photo contributions from me and Dr. Paul Schnitzler. Lastly, those that were at the Tampa Bay Engineering Week will remember the Keynote Speaker mentioning the "Ram Pump". Dave Figueroa contributed an article that explains its operation. Thanks to all!




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IEEE and Eta Kappa Nu Honor Society Sign Merger Agreement

24 February -- IEEE signed a merger agreement with the honor society ETA Kappa Nu (HKN), a nonprofit, public-service organization comprising nearly 200 university chapters, 14 February 2009. The merger, which will go into effect by mid-2009 pending final approval, will make HKN the official honor society of IEEE, recognizing scholarship and academic excellence and identifying student leaders, young professionals and eminent scholars in the IEEE's technical fields of interest.

Under the agreement, HKN will become an organizational unit of IEEE, governed by the new IEEE-HKN Board of Governors. A restricted endowment will be created in the IEEE Foundation to support HKN's educational, societal, and recognition activities. In addition to holding HKN's current assets, the new endowment will receive an initial donation of US\$1.2M from IEEE.

Read the full press release at

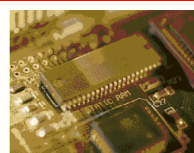
<http://www.ieee.org/web/aboutus/news/2009/24feb.html>.



IEEE-USA Announces \$5,000 in Video Competition Scholarship Awards for U.S. Undergraduates

WASHINGTON (12 February 2009) — Coinciding with Engineers Week from 15-21 February, IEEE-USA is announcing \$5,000 in scholarship awards to five undergraduates at four U.S. universities, who entered the organization's 2009 "How Engineers Make a World of Difference" video competition. According to IEEE-USA Communications & Public Awareness Vice President Paul Kostek, the winners are: first prize (\$2,000), Samantha Caldwell, University of Texas-Austin; second prize (\$1,500), Ben Toler and Emile Frey, Louisiana Tech University-Ruston; third prize (\$1,000), Paul Curtis, Indiana University at Purdue University Indianapolis; and honorable mention (\$500), Matt Elder, Rutgers University.

The three major award winners each spent one to three weeks over their universities' winter breaks preparing entries. The first and third-prize winners even drafted their siblings to appear before the camera. The video competition was designed to be replicated in IEEE Student Sections both in and outside of the United States. IEEE-USA will launch its third 2010 video scholarship competition in September. To view all of this year's award entries, go to www.youtube.com/user/ieeusavideo.



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Distribution and Power Transformer Seminar Including the New D.O.E. Standards

Date: Thursday, June 11, 2009
Time: Registration: 8:00 A.M. Seminar: 8:30 A.M. - 12:30 P.M.
Speaker: Don Duckett, P.E., IEEE Senior Life Member
Location: Sand Key Sheraton, 1160 Gulf Blvd. Clearwater
in conjunction with the Florida Electric Cooperatives Association (FECA)
Cost: \$100 Members, \$150 Non-Members, \$25 IEEE Student Members
PDH Credits: 4 professional development hours will be awarded. Be sure to provide your name as it appears on your Florida license and your license number to insure proper credit. Florida Provider #0003849 IEEE
Reservations: Contact Ray Trusik at FECA 850-877-6166 Ext. 5 feca@embarqmail.com

Back by popular demand is our Expanded Transformer seminar. This seminar will address the key portions of the new DOE 2007 Rule and its impacts on the size, weight, losses, and other criteria for distribution transformers. In addition, we will be discussing the basics of transformers and reviewing the sizing methods used in industry. At the end of each section, an in-class assignment will be given and reviewed.



Formation of the Florida West Coast IEEE Consultants Network

Many IEEE-USA members have turned to consulting as a way to practice their profession and have formed local Consultants' Networks to help each other and to find work. IEEE-USA is working to support these members' career exploration into the field of self-employed consulting through its Alliance of IEEE Consultants' Networks Coordinating Committee (AICNCC) <http://www.ieeeusa.org/business/default.asp>.

A group of members from the Florida West Coast Section recently took the initiative to form the **Florida West Coast IEEE Consultants Network** under the direction of Hermann Amaya as the Interim Chair. The Consultants Network will function initially as an Affinity Group under the IEEE Florida West Coast Section presently chaired by Dr. Jim Anderson. We are inviting all members who are engineering consultants or are planning to become one to join this newly formed group. There are no membership fees for our consultants' network. To join or get more information, please contact: HAmaya@tampabay.rr.com.

In addition, IEEE USA has a Consultants Database at http://www.ieeeusa.org/business/consultants/cgi-bin/consultant.cgi?task=display_page/page=home.html where members can list profiles describing their consulting practices. The annual fee is only \$79 for IEEE members. At the present time there are only two additional Affinity Groups established in the State of Florida: The IEEE Melbourne Section - Consultants' Network Affinity Group and Orlando Section Consultants' Network Affinity Group. Our future plans include maintaining good communications between the Florida West Coast IEEE Consultants Network and the Orlando and Melbourne groups so we can maximize networking potential in Florida.



Brain Teaser Challenge Solution - January 2009

Butch Shadwell

Dancing to the tune of an Irish jig I pondered the following poser. "In a condenser microphone element if the increasing sound pressure increases the capacitance, what kind of voltage change is observed on the microphone element as a high pressure wave passes?"

Whether you're a tap dancer or not everyone knows that the equation for the voltage on a capacitor is $V_c = q/C$. From the equation it is obvious that as C increases V_c must go lower, for a constant q. But I bet you already knew that.

Brain Teaser Challenge – February 2009

I am on an astrophysics blog site, and occasionally am asked to add a little extra physics expertise to the discussion. In one discussion a blogger asked about the possibility of having a hollow earth. Let's discuss a few things about the real earth first. Most of the heaviest elements that are found on the earth are concentrated toward the center of our planet, due to their higher density. These heavier elements also happen to be the ones that are radioactive. Most scientists today believe that the heat that keeps the center of the earth molten is generated by the nuclear decay of these heavy elements and probably a slow rate of nuclear fission too. So the center of the planet is quite hot and has a deadly level of ionizing radiation. It is actually a much more hostile environment than outer space. Even if we could open up an empty sphere, it would be a very uncomfortable place to sit.

The question I was asked to comment on in this blog thread was, what kind of gravitational forces would one feel in this hollow earth scenario? Imagine the sphere is relatively small, say eight feet in diameter. Don't forget your lead underwear and a high power air conditioner.



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 column.



Life Members Seminar on April 18th

Your FSCS Life Members Committee has scheduled the first of three (hopefully) Seminars for this year. The first Seminar is now scheduled for 18 April, to be held at the Red Lobster Restaurant, 38th Street (US19) at 62nd Avenue, St. Petersburg.

A "Dutch treat" lunch may be ordered at 1200 noon with a Power Point presentation and discussion following.

Life Members should have received an Email from Bob Franklin (boatseven@aol.com) with further details, including Luncheon Selections.

Following is a summary of the subject to be presented with a condensed version of our speaker's history:

ENERGY CRISES: REALITY or MYTH ? With the price of oil oscillating over the last 18 months between a high of \$ 155 / barrel, a low of \$ 34 /barrel, and world demand, especially China and India increasing exponentially, there is an on-going debate as to what will the USA do. What is the reality of the energy options, not only in the USA but in the world. In his presentation, Itzik will challenge us to define, in technical term as opposed to politically correct terms, where we really are, and where do we, the technologists, believe the options are.

The presenter, Isaac (Itzik) Barpal, Ph.D. E.E., P.E., has a long and distinguished background in almost all fields of engineering, technology and energy. Prior to retirement he served as the Chief Technology Officer of the Westinghouse Electric (1987-1993) and of the AlliedSignal (Honeywell) Corporation (1993-1998). During his career he was involved in designing, building and implementing transit systems (including our own Tampa Airport People Mover System), a 1.2 GW nuclear power plant south of Rio in Brazil, the development of the solid oxide fuel cell, and many others. His Ph.D. dissertation in the late 60's was the invention of the Parallel Hybrid Automotive Propulsion System, basically what is being used today by car manufacturers.





Development of Renewable Energy Projects

Date: Friday, April 17, 2009
Time: Registration: 11:30am-12:00pm
Presentation: 12:00pm-1:30pm
Speaker: J. L Martinez – Sr. Director Project Development
Location: Tampa Electric 702 N. Franklin Street Tampa
RSVP: Online at: <http://time2meet.com/fwcs-pes3/index.html>
Space limited to the first 30 registrants!!!
\$10 for IEEE members and \$15 for non-members
Questions: Serge Beauzile at 727-409-1242 or Serge.Beauzile@ieee.org
Florida Power & Light Company



J.L. "Buck" Martinez is the senior director of project development for FPL Group, where his responsibilities include overseeing the development of renewable energy projects in the State of Florida.

FPL Group is one of the nation's leading electricity-related services companies. Its subsidiaries include Florida Power & Light Company, Florida's largest electric utility with nearly 4.5 million customer accounts, and FPL Energy, LLC, a fast-growing independent power producer with a presence in 26 states.

Mr. Martinez joined Florida Power & Light in 1981. Prior to being named to his present position, he served as director human resource services overseeing the corporate safety department, labor relations and the corporate quality program. Before that he served

the company in various management positions and special projects.

Mr. Martinez holds a Bachelor of Arts degree from St. Thomas University and a Master of Business Administration degree from Nova Southeast. In addition, he is a graduate of the Boston University Leadership Program.

He and his wife Silvia, and their three children, live in Palm Beach Gardens, Florida.



IEEE Celebrates its Two Millionth Article on IEEE Xplore®

16 March – IEEE, the world's largest technical professional society, is celebrating the addition of the two millionth article to IEEE Xplore, the world's largest source of valuable, cutting-edge, research, standards and educational courses.

Providing nearly one-third of the world's highest quality technical literature in electrical engineering, communications and computer science, the IEEE Xplore digital library is the most trusted source for vital information in technology today.

The two millionth IEEE Xplore article appears in the March issue of *IEEE Transactions on Automatic Control*, one of IEEE's 142 journals and magazines. The article, "Intelligent Packet Dropping for Optimal Energy-Delay Tradeoffs in Wireless Downlinks," is written by IEEE Senior Member Michael J. Neely, assistant professor at the Communication Sciences Institute, part of the Electrical Engineering Department at the University of Southern California, Los Angeles.

Neely's article discusses how implementing an innovative algorithm into a wireless network can fundamentally change the efficiency of wireless transmitters, which would be beneficial in prolonging battery life without adversely affecting performance. The article will be available on IEEE Xplore beginning March 16, 2009.



More Photos from Tampa Bay Engineering Week

The 2009 Tampa Bay Engineering Week banquet was held on Friday, February 20, 2009, at the Grand Hyatt Hotel in Tampa. Over 375 local engineers and guests attended this event which was held to celebrate engineering students, teachers, and professional engineers. The banquet was held during National Engineer's Week which ran from February 15-21 this year.



USF Students Giselle Moya, Kosol Son, Amal Patel, Nathan Quecan, Angela Magill and Souad Rochdi



Dr. Rudolph Henning and John Stankowich



Nathan Quecan, Student Engineer of the year and Dr. Paul Schnitzler



Jim Beall, FWCS Conferences Chair



Dr. Gary Blank, Jim Lumia and Bonnie Blank



Claude Pits III, Jim Howard and Donna Howard



Question: What's Worse Than An Unhappy Worker Leaving?

Answer: If They Stay...!

We all know that having high turnover can at best be disruptive and at worst can throw projects off schedule, kill budgets, and doom overall employee morale. So you would think that if you are somehow able to have a low number of engineers leaving that everything would be hunky dory, right? Wrong -- you might now have lots of unhappy employees who have for one reason or another decided that they can't leave right now. They'll keep coming into work each day (or logging on if they are unhappily telecommuting), but they will be dragging their virtual feet and just going through the motions. They are not going to be helping the company be a success.



Why are so many non-leaving engineers unhappy? I think that I know the reason and the author Patrick Lencioni has captured them quite nicely in his book "The Three Signs of a Miserable Job". In his book, Patrick states that he believes that people become unhappy in their jobs when their basic social needs are not being met. Yeah, yeah, yeah -- we all love a paycheck and the bigger the better. However, we really go to work in order to have some very basic human needs met: to get a sense of accomplishment, to boost self-esteem, and to feel that we are part of a community.

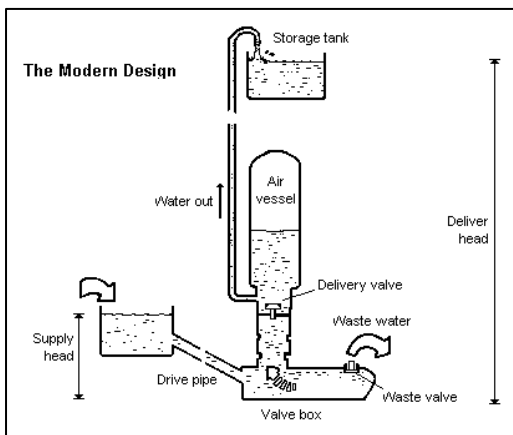
When we aren't getting these needs met, Patrick calls the problems "anonymity, irrelevance, and immeasurability". Great, now you've got the silent problem of unhappy engineers lurking in your department. What to do?

Don't despair! In order to reach out and change unhappy engineers into committed employees you have to tackle these key issues one by one. One-on-one feedback is the key to providing employees with both a sense of accomplishment ("they know who I am!") and boosting self-esteem ("they like what I do!"). Developing a sense of community is somewhat more difficult -- in the engineering field if this is done incorrectly, it can come across as fake. However, if done correctly you can turn a lackluster department into a team of overachievers. Now that's something to cheer about!



Ram Pump

The speaker at the 2009 Celebrate Engineering Banquet, AnnMarie Spexet, P.E. spoke of the Engineers Without Borders project to help a small African community obtain water from a stream a few hours walk from their village. A Ram Pump was chosen as a device to propel the water and eliminate the need for a daily routine of walking to obtain water for the village.



As Electrical Engineers, we may not have been exposed to the technology used for the Ram Pump. It uses no other power source other than the energy of the flowing stream to pump the water. Here is a simple explanation of its operation:

The stream water is directed to flow through a pipe with a valve having a weight or spring to allow the flow. The water's inertia causes the valve to close and thus generate a pressure pulse in the water stream. The pressure pulse forces water through a check valve (diode) to a pressure reservoir connected to a pipe that provides water to the village which can be 15' or 20' higher in elevation than the stream. The weight or spring opens the flow valve for the next pulse generation at a rate that can exceed 100Hz!

The closest electrical analogy might be the boost DC-DC converter where current flow in an inductor is interrupted causing a voltage rise that charges a capacitor through a diode to a higher voltage than the incoming power supply.

David Figueroa



1st Annual Rudy Henning Distinguished Mentoring

Award To Be Given At WAMICON!

The organizers of the upcoming 2009 10th annual WAMICON (IEEE Wireless and Microwave technology conference, April 20-21, Sand Key Beach, Clearwater, Florida) have announced that a new annual award will be given out at the conference. The Rudy Henning Distinguished Mentoring Award has been created to recognize an individual who has performed exemplary service encouraging students and/or mentoring young engineers to advance careers in the areas of RF/Microwave and/or Wireless Engineering.

To be considered for this award, candidates must be a current or past member of IEEE who has had a strong impact on influencing students, young engineers or young faculty members to further their professional careers in the areas of RF/Microwave and/or Wireless Engineering.

Factors to be considered are leadership, innovation, dedication, distinguished service and breadth of participation. In keeping with Rudy Henning's career which has been dedicated to attracting students, both at the secondary school and college level, to pursue a career in RF/Microwave engineering, the goal of this award is to recognize individuals who have been influential in this endeavor.

This year's recipient of the award is Dr. Tom Brazil. Dr. Brazil is a noted educator at University College Dublin (UCD). He is a Fellow of the IEEE. He is also Fellow of Engineers Ireland and a Member of highly respected Royal Irish Academy in which he chairs the Science Committee. He has been a tireless, highly inspirational mentor to countless undergraduate and graduate students in his career spanning well over 30 years



IEEE RFID 2009, Orlando, FL, April 27-28, 2009

The 2009 International IEEE Conference on RFID addresses key topics and issues related to RF-based identification and communication systems, and will feature keynotes, presentations on technology advances and panel discussions on pressing topics. IEEE RFID 2009 is the third annual conference that brings together researchers and practitioners from both academia and industry to share research results and knowledge in the areas of RFID technologies, their supporting large-scale distributed information systems and their applications.

Once again co-located with the RFID Journal LIVE! 2009 tradeshow and conference, attendees and presenters alike benefit. Authors are invited to submit full 8-page papers in the IEEE conference format presenting new research related to the theory and practice of RF-based identification and communication systems. All submissions must describe original work not previously published or currently under review for publication in another conference or journal. To find out more about the topics to be discussed go to the link below.

For more information go to <http://www.ieee-rfid.org/2009/>



The 10th Annual IEEE Wireless and Microwave Technology (WAMI) Conference

The conference will be held on beautiful Sand Key beach in Clearwater, FL on April 20-21 2009. 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. Exhibition Schedule: April 20, 2009 Regular exhibition 10:00 am-5:00 pm Open Reception and Poster Session 5:30 pm-7:00 pm April 21, 2009 9:00 am to 4:00pm.

Please visit www.wamicon.org to register and obtain your daily pass!



April 2009 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	7 <i>EXCOM at TECO Plaza</i>	8	9	10	11
12 <i>Easter</i> 	13	14	15	16	17 <i>Renewable Energy Seminar Page 6</i>	18 <i>Life Members Seminar, Page 5</i>
19	20 <i>WAMICON 2009 See page 9</i>	21 <i>WAMICON 2009</i>	22	23	24	25
26	27 <i>IEEE RFID Conference Orlando</i>	28 <i>IEEE RFID Conference Page 9</i>	29	30	1	2

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