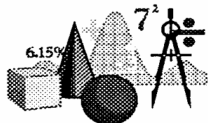




IEEE

SPARKS

IEEE Daytona Section Newsletter
November/December 2010



FROM THE HIGH CHAIR

This is my last set of notes as your Chair. Our accomplishments over the last two years have been due to the hard work from many of you. The new slate of officers will take office in January 2011 and I hope you support them as well.

Election for the new officers will be held at our December 7 meeting. Other nominations can still be made. The nominating committee nominated Dr. Tianyu Yang for Chair, Tracy Wichmann for Vice Chair, Frank Baxter for Treasurer and Roger Grubic for Secretary.

The IEEE hosted a seminar on October 23, 2010, in Cocoa. The event was very successful with 48 local members attending and 12 sections listening in via the Internet.

It is possible for us to start a Consulting Affinity Group, if there is enough interest. You don't have to be a consultant today and help is available to start the group. Please contact me if you are interested. Other sections have found this activity a valuable resource.

The section has made some great progress over the last few years – a brief recap:

1. The ERAU Student branch participated in the Southeast Con robotics event and presented their work at our section meetings. The ERAU branch is active and has the full support of the ERAU engineering department.
2. We supported the ERAU Engineering Week activities in 2010 and will do so in 2011.

3. The Small Radio Telescope was funded, assembled, modified, tested and is now operational at the Daytona Museum of Arts and Science. A network was set up in the museum to allow access in multiple locations and a remote access capability was completed. All of this required ingenuity and hard work by many members.
4. We continued to judge student projects at the Tomoka Science Fair and give cash awards and a plaque.
5. Outstanding speakers were at each of our section meetings.
6. The local Computer Society chapter was formed and is meeting at least twice per year with great speakers.
7. The Life Member affinity group has visited local firms at least twice per year.
8. The section ExCom has met several times over the past two years with great attendance from the officers, committee chairs, and the student branch.

Where we fall short is attendance at section meetings. We need you to arrange your schedules to attend; you don't have to attend the dinner to hear the speaker portion, which begins at 8:00 PM. The meeting is a chance to meet people with similar interests and a chance to discuss real world problems with a possibility that others may have had similar experiences and can help you. The Career Development Workshop emphasized networking, which must be an ongoing activity by you.

Please remember to renew your membership for next year. Even Life members must renew. Many

Life members donate the equivalent value of their dues to IEEE sponsored charitable organizations. Each year we try to follow up with members that have forgotten to renew. The IEEE (1) is a career benefit with continuing education activities and technical societies; (2) improves your technical knowledge via technical periodicals and eBooks; and (3) provides a personal benefit with the insurance, travel and financial services available. See the IEEE web site.

At our last section meeting Dr. Brian Butka and William Gaughan of ERAU spoke about "Calibrating Speed Detection Devices for Extended Applications LIDAR and RADAR." Their presentation was insightful and humorous.

At our next meeting on December 7, Mr. David Wise and Mr. Rory Malisoff of KVAR Energy Savings will discuss their products and their benefit to you.

Have a Happy Holiday season

Roger Grubic

CONGRATULATIONS ARE IN ORDER

Our Section is extremely pleased to announce that Charles Husbands has been selected for the IEEE Florida Council Outstanding Service Award for 2010!

Charlie's contribution to the SRT project has brought our section strong recognition, and we look forward to seeing the SRT's positive impact on science and engineering education in the local community.

Our congratulations to Charlie for a well deserved award!

NOVEMBER PROGRAM

REDUCING ENERGY CONSUMPTION: WHAT CAN YOU DO? HOW DOES POWER FACTOR WORK INTO THE SOLUTION?

America has a great thirst for energy. We need energy to maintain lifestyles that we have become accustomed to. There are ways to reduce consumption by minimizing and optimizing usage

and by using different technologies. These will be discussed from a technical and operational perspective.

What is Power Factor? How can it impact your electrical system and energy usage? There are many different technologies competing for a place amongst those systems that need to be considered, so you may meet your energy goals; and several will be discussed. Having useful information about what to consider when looking at energy conversation is important to establish baseline reviews to determine what is most beneficial to you.

OUR SPEAKERS

David Wise, Vice President of Production and Technology, KVAR Energy Savings, Inc. and Rory Malisoff, National Accounts Executive

Mr. Wise has held numerous electronic engineering technology positions in the manufacturing sector. He brings considerable products certification management capabilities and experience. Mr. Wise is also recognized as inventor on seven US patents.

After attending University of Oregon and Hofstra University, Rory Malisoff began working at his family's commercial real estate and land development business in Chicago, Illinois. It was in Chicago while maintaining commercial real estate properties that Mr. Malisoff realized the urgency for energy conservation and awareness.

In 2007, Mr. Malisoff met with KVAR Energy Savings, Inc. (KVAR) CEO, Steve Fish, and learned about power factor optimization through the use of patented technology licensed to KVAR. Thereafter, Mr. Malisoff relocated to Daytona Beach, Florida, where KVAR manufactures energy saving devices called KVAR Energy Controllers (KVAR ECs™).

BRAIN TEASER CHALLENGE SOLUTION OCTOBER 2010 BUTCH SHADWELL

Last month's BTC was a bit easier than I like, but I was having a worse time than usual coming up with an appropriate problem. I decided to ask about LED biasing as follows: "...LEDs have a forward voltage drop of 4 volts at 25 degrees C at the junction and the forward voltage drops 3mV

per degree C. Then I supply forward current to one of these LEDs through a 100 ohm resistor and a 10VDC source. So tell me the current through the LED when the junction gets up to 100 degrees C?"

Though the problem was very easy, it does point out a common design error. LEDs are usually biased through a current limiting resistor. When a higher voltage supply is available, there are often multiple LEDs in series biased by a resistor. Here is the error. When you have many LEDs in series, and they all have negative temperature coefficients, as the temperature rises the total forward voltage changes by the sum of all of the individual LED drops. This will cause more current to flow through the LEDs (and so on) and you can get a thermal runaway condition. In this example a 75 degree rise in junction temperature causes a 0.225 volt drop in the LED forward voltage. So you get 6.225 volts across a 100 ohm resistor, resulting in 62.3mA of current. But I bet you already knew that.

BRAIN TEASER CHALLENGE

We do not have a Brain Teaser Challenge this month.

EDITORS NOTES

NOTE- Due to Thanksgiving Day, this months meeting is on **TUESDAY December 7th**.

The **SPARKS** newsletter is also available on our website. The website address is shown in the Section information box to the right. Our neighboring Sections in Melbourne and Orlando also sponsor activities and meetings that also may be of interest to our members. We encourage you to visit their websites.

Region 3 website
<http://www.ewh.ieee.org/reg/3/>

Melbourne Section website
www.ieeemelbourne.org

Orlando Section website
www.ieee.org/orlando

FUTURE MEETING DATES

Due to conflicts with the clubs schedule on the 4th Thursday in January and February, the proposed meeting dates for the spring session are: January 20, February 23, March 24 and April 28th.

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The website address for the Daytona Section is:

<http://www.ieee.org/go/daytona>

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