



THE SUNCOAST IEEE SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

<http://ewh.ieee.org/r3/floridawc>

Volume 47 - No. 2

February 2004

Celebrate Engineering 2004 Banquet

*You and Your Guest are Cordially Invited to Participate at this Gala Event!
Celebrate Valentines Day in Style!*

RSVP Your Reservation & Mark your calendar today!
FLASH NEWS! – IEEE MEMBERS Qualify for REDUCED Admission!

Date: Friday, February 13, 2004

Time: Social, Registration, Vendor Displays: 5:30 – 7:00 pm
Dinner, Events: 7:00 – 10 pm

Place: A LA CARTE EVENT PAVILION,
4050 Dana Shores Drive (813-831-5390)
Just West of Tampa International Airport off Memorial Blvd.
Check their website and pictures of venue elegance!
<http://www.alacarteeventpavilion.com/>

Directions: See Page 8 of this newsletter.

Menu: Choice of Prime Rib, Chicken or Vegetarian, with all the trimmings & desert!

Cost: \$15 each per IEEE member and guest.

The FWCS Executive Committee voted to subsidize our members an additional \$10 off the published \$25 cost charged to other participating Society members. Don't miss this opportunity, **already heavily subsidized by Sponsors and Vendors for your enjoyment!**



Reservations **must** be made in advance for planning purposes – no reservations taken at the door! Credit cards are accepted! Contact John Conrad at 813-926-4004 for tickets or reserve online at: <http://weiquality.com/celebrate2004> For Banquet details visit our website or see previous Newsletter issues!

Keynote Speaker: Dr. Robin Murphy, USF, Robot Assisted Search & Rescue, with demo!

Master of Ceremonies: Dick Crippen, local TV and radio personality and sports commentator

Awards to Heros: Recognition of outstanding officers, members, & students

Entertainment: Live musicians, caricaturist, door prizes, and more!

Vendors & Sponsors: See the latest technology & Services available at their exhibits!

<i>Inside this Signal..</i>		P4	MTT/AP/ED Chapter Meeting Talk on Satellite Remote Sensing	P7	USF Engineering Expo 2004 Student's Corner
P3	PES/IAS Annual Engineer's Week Luncheon Talk – August 14, 2003 NE Blackout Lessons	P5	Professional Development Hours... WAMI Conference CFP	P8	Are you an Experienced Electrical Engineer?
P3	Life Member Meeting: What Will Your Grand Children's Children Do for Power?	P6	100 Years of Flight!	P9	Brain Teaser Column (BTC) USF 9 th Mini-circuits Report

2003 IEEE EXECUTIVE COMMITTEE FLORIDA WEST COAST SECTION

CHAIRMAN: John Conrad
Windsor Inc. (813) 926-4004
john.conrad@ieee.org

VICE CHAIRMAN: Arthur L. Nordlinger, PE
813-508-2952,
a.nordlinger@ieee.org

SECRETARY: Jules Joslow,
ElectroMark, Inc. (800) 274-2383
jjoslowemi@aol.com

TREASURER: Ralph Painter,
Tampa Electric Co. (813) 641-5224
rdpainter@ieee.org

SIGNAL EDITOR: Srinivas Katkoori,
USF (813) 974-5737
katkoori@ieee.org

AWARDS: Richard Beatie, PE
r.beatie@ieee.org

BYLAWS: Richard Beatie, PE, Consultant
(813)-289-0252
r.beatie@ieee.org

EDUCATION: Dr. Rudolf E. Henning and Zhen Tong
(813) 974-4782 or (727) 328-8777 (Ext: 333)
henning@eng.usf.edu or tong@ieee.org

PACE: Scott Haynes, Morrow Technologies
(727)-531-4000, scott.haynes@ieee.org
Richard Martino, Consultant
(727) 536-1776, richard@richardmartino.com

MEMBERSHIP: Tom Blair, TECO Energy,
813-228-1111 (ext: 46171) tom_blair@ieee.org

STUDENT BRANCH CO-ADVISORS:
Dr. Paris Wiley, USF (813) 974-4743
wiley@eng.usf.edu
Dr. Srinivas Katkoori, USF, (813)-974-5737
katkoori@ieee.org

STUDENT BRANCH MENTOR: Jim Howard
Lakeland Electric (813) 876-1748
j.howard@ieee.org

STUDENT BRANCH CHAPTERS:
Angela Alexander, IEEE Student Chapter,
(813) 974-4776, aalexand@eng.usf.edu
Upavan Gupta, IEEECS Student Chapter,
(813)-974-1348, ugupta@csee.usf.edu

PES/IAS CHAPTER: Arthur L. Nordlinger, PE
813-508-2952, a.nordlinger@ieee.org

MTT/AP/ED CHAPTER: Shawn K O'Brien
Raytheon Systems Co.
shawn_k_obrien@ieee.org

COMP/AESS CHAPTER: James S. Lumia
(813) 832-3501, jlumia@ieee.org

SP/COMM CHAPTER: Bror W. Peterson
Raytheon Systems Co. (727) 302-4710
Bror_W_Peterson@raytheon.com

LIFE MEMBER CHAPTER: Jules Joslow
ElectroMark, Inc. (800) 274-2383
jjoslowemi@aol.com

GOLD: Dennis Trask, d.trask@ieee.org (813) 366-4201

WEB PAGE: <http://ewh.ieee.org/r3/floridawc>

WEB MASTER: Jim Anderson, jim.anderson@ieee.org

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied.

All material for THE SUNCOAST SIGNAL is due by 7th day of the month preceding the issue month. Address all correspondence to:

Prof. Srinivas Katkoori,
4202 E. Fowler Avenue, ENB 118, Tampa, FL 33620.
Voice: (813) 974-5737 Fax: (813) 974-5456
E-MAIL: katkoori@ieee.org
The Signal, Copyright 2003

Chair's Comments

By John Conrad



We are off to a good start so far this year. Our schedule is filling up rapidly. I urge you all to attend the Celebrate Engineering Awards banquet on Friday, February 13th. Dr Robin Murphy will be giving a talk about the mini-rescue robots and it is a great opportunity to get to know engineers from other disciplines and societies.

The PES chapter, under Art Nordlinger's expert guidance, plans to be even busier than usual with numerous talks, tours, and seminars scheduled for the coming months. Please join me in welcoming Dr Mohamed Nezami and Huseyn Arslan the new Chair and Vice-chair of our SP/COMM chapter respectively. We thank Bror Peterson the outgoing chair for his continuing efforts, as he becomes the chapter Treasurer. Jim Lumia and Shawn O'Brien continue their good work as Chairs of the CS/AESS and MTT/AP/ED chapters respectively.

In April the section is assisting with the organization of the Wireless and Microwave Information (WAMI) conference and in May we are hosting the Industrial & Commercial Power Systems Conference under the watchful eye of Jim Beall. Both of these conferences will be in Clearwater Beach.

In addition we are expanding our support of county science fairs, increasing our involvement with USF and forging stronger relationships with other local engineering societies. I am sure there are other important events planned that I just cannot bring to mind as I rush towards the newsletter deadline!

With all this activity the opportunities for volunteers are greater than ever, so contact any member of EXCOM and offer to help out in some small way. If you do, everybody wins.

Electrical Engineering Design Company Naples, FL

12 year old growing highly profitable
company; 30% ROI; \$425K asking
price; \$145K Annual benefit to
owner. Homes & Land Brokers Inc.

Phone: 800 598 4610 x 103

Email: marty@hlbrokers.com



PES/IAS Annual Engineer's Week Luncheon **August 14, 2003 Northeast Blackout -** **Lessons Learned and Recommendations**



On August 14, 2003, large portions of the Midwest and Northeast United States and Ontario, Canada, experienced an electric power blackout. The outage affected an area with an estimated 50 million people and 61,800 megawatts (MW) of electric load in the states of Ohio, Michigan, Pennsylvania, New York, Vermont, Massachusetts, Connecticut, and New Jersey and the Canadian province of Ontario. The blackout began a few minutes after 4:00 pm Eastern Daylight Time (16:00 EDT), and power was not restored for 2 days in some parts of the United States. Parts of Ontario suffered rolling blackouts for more than a week before full power was restored. A joint U.S.-Canada Power System Outage Task Force was established to investigate the causes of the blackout and how to reduce the possibility of future outages. Mr. Gerry Cauley, Director-Reliability Performance of the NERC will provide a briefing on the findings and recommendations of the Outage Task Force.

Speaker: Mr. Gerry Cauley,
Director – Reliability Performance
North American Electric Reliability Council
(NERC)
Date: Thursday, February 26, 2004
Time: 11:30 A.M.
Location: TECO Hall, TECO Plaza,
702 N. Franklin St. Tampa, FL
Cost: Members \$10, Non-members \$15,
Students \$5 includes lunch
Registration: Pre-registration is required.
Register online
<http://www.weiquality.com/fwcs-meetings/>
Limited to 35 participants.
Parking: Metered street parking is available.
Reasonably priced parking is also available at
the Ashley Street Garage next to the Public
Library, on Ashley Street approximately two
blocks from TECO Plaza.
Questions? Contact Art Nordlinger
a.nordlinger@ieee.org

What Will Your Grand Children's Children Do for Power?



Speaker: Coleman Raphael, Ph.D. Sort of Retired.
Date & Time: 20th February 2004 at 11:30 AM.
Location: TECO HALL, TECO Plaza, 702 N. Franklin St., Tampa, FL.
Refreshments: Gourmet Luncheon of Sandwiches, Chips, Beverage & Dessert.
Cost: \$10.00 per person.
Registration: Online at: <http://www.weiquality.com/fwcs-meetings/>
Limited to 35 registrants.
Questions: Call Jules Joslow at 941-351-4812 or E-Mail joslow@ieee.org.
We will try to arrange for car pools for those living outside Tampa area.

Dr. Raphael will present an overview of energy, the kinds, the sources, its distribution, and uses. Also discussed will be the World's use of energy, rate of depletion, and available sources. He will cover the pros and cons of the various energy sources.

Dr. Coleman Raphael has been a college professor (Pratt Institute), a chief of Physics (Republic Aviation), a rocket scientist (at AVCO), a Space Systems division manager, and Vice President (Fairchild Industries), a President and Chairman (Atlantic Research Corp.), and Business School Dean (George Mason University). He was a director of seven companies (including GEICO and the National Bank of Washington), an advisor to three governors, a founder and CEO of several small businesses, and teacher of capitalism in China. He has just finished writing a new book titled "One Businessman's Guide to Success--Based on 44 Rules of Smart Management." In his spare time he is trying to master the game of golf.

A Joint MTT/AP/ED and SP/Comm Chapter Meeting
The WindSat Polarimetric Radiometer



DATE/TIME: Thursday, February 19, 2004, 6:00 PM
SPEAKER: Dr. W. Linwood Jones
LOCATION: To be Announced - for further information after 2/1/04
contact Shawn O'Brien at (727) 302-3493.
PLEASE RSVP: Leave name & country of citizenship with Shawn O'Brien
at (727) 302 3493.
Email: shawn_k_obrien@raytheon.com
Bring a guest; non-members welcome!

ABSTRACT: In January 2003 the world's first microwave polarimetric radiometer (WindSat) was launched on-board the USAF's space step program Coriolis satellite. Developed by the Naval Research Laboratory in Washington DC, this satellite experiment is a proof of concept mission to validate the passive microwave measurement of oceanic wind direction using polarimetric measurements of the oceanic emission Stokes parameters. A description of the WindSat instrument and the wind direction measurement technique is presented; and preliminary results of a novel on-orbit radiometric calibration are given.

BIOGRAPHY: Dr. W. Linwood Jones (IEEE Senior Member – 1975; Fellow - 1999) received the Ph.D. degree in electrical engineering from the Virginia Polytechnic Institute and State University, in 1971.

He is a Professor with the Department of Electrical and Computer Engineering at the University of Central Florida in Orlando. At UCF, he teaches undergraduate and graduate courses in communications, satellite remote sensing and radar systems. Also, he is the director of the Central Florida Remote Sensing Laboratory where he performs research in satellite microwave remote sensing technology development. Presently, he is a member of the science team for the following remote sensing satellite programs: Jet Propulsion Laboratory's SeaWinds Scatterometer, the NASA Goddard Space Flight Center's Tropical Rainfall Measuring Mission and the Naval Research Lab's WindSat Polarimetric Radiometer.

Prior to becoming a college professor, Dr. Jones had 27 years government employment with NASA at the Langley Research Center, NASA Headquarters and the Kennedy Space Centers. Further, he spent 8 years in the private aerospace industry with employment at General Electric's Space Division in King of Prussia, PA and Harris Corp.'s Govt. Aerospace Systems Division in Melbourne, FL.

USF Electrical Engineering Weekly Wireless Seminar

Spring 2004 weekly Wireless Seminar present lectures by invited experts and by USF's own faculty on topics of this multi-faceted field to students enrolled in this seminar course. By completing the course, the students will have gained a new, broader perspective of this rapidly expanding field driven by the dynamics of scientific, metrology and materials advances plus manufacturing and application innovations. Other students and IEEE members are invited to come to a seminar of their interest. It is not possible to schedule these seminars, held from 2pm to 3:15pm on Thursdays, far enough in advance to list them in the Suncoast Signal. Notices are posted days in advance in the ENB Building (EE Department). As this is printed, Seminar plans call for "MEMS" on Feb. 5th and "Radar Remote Sensing from Satellites" by Dr. Linwood Jones of UCF on Feb. 19th. For more information, contact Dr. Rudy Henning (henning@eng.usf.edu). Please note that the seminars are space limited.

Professional Development Hours...

Get 'em Here!

The Florida West Coast Power Engineering/Industrial Applications Society Chapter is planning a number of seminars and technical courses in 2004 that will provide the technical "area of practice" professional development hours (PDHs) required for renewal of your Professional Engineer (PE) License.

In every two-year renewal cycle, all PEs must accumulate four PDHs of technical continuing education in their area of practice and four hours of "Rules and Laws" continuing education. The next PE renewal occurs in February 2005; therefore, continuing education credits should be completed in 2004.

The IEEE Industry Application Society is holding their Industrial and Commercial Power System conference in at the Sand Key Sheraton in Clearwater May 3 - 6, 2004. Beckwith Electric will present a tutorial on Generator Protection at the conference that provides qualifying PDHs on Thursday, May 6. The entire conference is beneficial to electrical engineers who design or maintain power systems; however, separate registration for the Generator Protection tutorial is available. Mark your calendars and check the conference web site at the following link by entering year 2004 and keyword "I&CPS." <http://www.ieee.org/conferencesearch/>

Additional continuing education opportunities that are in the planning stages are:

Spring 2004, Secondary Selective Medium and Low Voltage Bus Transfer Systems

June 2004, Transformer seminar

June 2004, Short Circuit Coordination and Protection

For information, keep an eye on the IEEE – FWCS Signal newsletter or visit the IEEE - FWCS meeting web page at: ewh.ieee.org/r3/floridawc/ or the IEEE - FWCS meeting registration page at: www.weiquality.com/fwcs-meetings/



Wireless and Microwave Technology Conference 2004 Radisson Sand Key, Clearwater, FL April 15-16, 2004

The 6th annual IEEE Wireless and Microwave Technology (WAMI) Conference will be held on beautiful Sand Key beach in Clearwater, FL, on April 15 and 16, 2004. The conference will address up-to-date multi-disciplinary research needs and interdisciplinary aspects of wireless and RF technology. The program includes oral presentations, poster presentations, and tutorials.

Prospective authors are invited to submit original and high-quality paper summaries for presentation at the WAMI conference and for publication in its Conference Record. The technical program will cover wireless communication systems and RF technologies.

Important Dates

Extended Abstracts Due: 15th January 2004

Author Notifications: 1st February 2004

Final Papers Due: 25th February 2004

Conference Registration: Please see <http://ee.eng.usf.edu/WAMI/conferences/2004/>.

Early registration ends March 1, 2004. Special hotel pricing ends March 14, 2004.

100 Years of Flight!

By Richard E. Beatie, P.E., SM

One hundred years ago, on December 17, 1903, the Wright brothers made their historic first flight of a heavier than air powered aircraft. The flight lasted only 12 seconds and traveled a mere 120'. Look where we have come today! Jet powered aircraft – commercial and military aircraft that travel beyond the sound barrier, missions to the moon, and now successful landings on Mars again in January! Think about the advances in aviation, space exploration, communications, and navigation since then. A mere hundred years!

All of this made possible by technological developments produced by engineers like us! Not much electrical engineering except for the magneto that provided the spark, but it started the engine, and started our electrical engineering involvement in powered flight!

Join us all to celebrate this history making flight and other engineering achievements by attending the Celebrate Engineering Banquet on February 13.

John Twitchell (former FWCS member & Past Chair from Princeton, NJ) and I (from Tampa) drove to Kitty Hawk to experience the historic reenactment and celebration of this first flight on December 17. The Flyer made a heroic attempt to get airborne around noon, but prevailing winds were insufficient, and it never left the ground, careening off the end of the wooden track runway. Damage was minor. In the hangar we observed them dismantle the engine completely for minor adjustments, and replace a broken strut wire – all in less than 2 hours! Do that with *your* car, boat or airplane engine!

The next attempt to fly was about 4:00pm. They had to relocate the 180' wooden runway by about 90 degrees to face into the changing wind direction. Unfortunately, they needed a minimum of 10 MPH and the prevailing winds didn't exceed 3 MPH. They fired the engine again (propped by hand with one mechanic on each propeller) successfully for the crowd of 30,000 spectators, but did not attempt another flight. Rain was not a problem. It actually flies better when the wings are wet because it seals the open-weave muslin, providing much better lift!

Memorable highlights included vintage plane static displays and fly-bys of military and old civilian aircraft. Hands-on aviation displays and various flight simulators. A human powered 3-D gyroscope sponsored by Air Force Recruiters - you climb into and they spin you around in all directions at high speed until you throw up. (John T. encouraged me to try it but I declined, considering it the ultimate URP machine at my age, but the young kids kept lining up for additional chances to ride it!) John Travolta (an avid pilot) as MC. Musical concerts from people I have never heard of! President Bush flew in by a big chopper and made a nice speech in the rain, and then after he left and reboarded, the Presidential Jet made a slow pass over the show area, wagging it's wings to salute 100 years of aviation history. Many visitors swore they saw Mr. Bush waving to us out of the presidential window! (He was probably URPing in the presidential bathroom, due to the turbulence!)



John Twitchell with flying buddies Orville & Wilbur Wright



Richard Beatie moments before crashing Wright Flyer Simulator

Engineering EXPO 2004

*University of South Florida
February 27-28, 2004*

Engineering EXPO has been a part of the College of Engineering since 1974. Since then it has grown to become one of the largest events held at the University of South Florida Tampa campus. EXPO provides the College of Engineering with an opportunity to strengthen its relationship with the rest of the community, local industries, and local K-12 students who get a first hand introduction to various areas of engineering career tracks. The IEEE Student Branch at USF will present the LASER Light Show in the Engineering Auditorium. Come experience the fun of lasers set to modern music.

EXPO is free and open to the public.

For more information, visit EXPO online: <http://org.eng.usf.edu/expo/>



Students' Corner

IEEE Student Branch, USF

The Laser Light Show is back! With EXPO on Friday 27th and Saturday 28th of February, the student branch is currently recruiting volunteers to help out with this year's show, with our sense of music and style and finesse with the show, our demonstration should be a hit this semester! To volunteer to help out please email: ieee@eng.usf.edu.

In conjunction with Mr. Rick Moore of Custom Manufacturing Engineering, the student branch will host a series of workshops all based on PCB layout throughout the month of February. These sessions will be held in a computer lab on campus on each Saturday from 9am-2pm, they are free and are open to anyone who is interested. A schedule will be posted on the IEEE Student List serve as soon as one becomes available. For more information, please contact Carlo Dionson via email: carlo@dionson.com.

The student branch officers are constantly asked "What kind of benefits can I get from joining IEEE?" Here's an answer we can all relate to: money! Many scholarships are available through IEEE, flipping through the IEEE Potentials Magazine that all student members receive. We found an essay competition, requiring an essay on the History of Electronics; as an elective we all take History of Electro-technology, so this should be an easy task to earn some extra cash. Scholarship Opportunities are available online at the IEEE Website, www.ieee.org and some may also be found in various IEEE subscriptions.

We would like to encourage everyone to attend as many events as possible this semester; it's our challenge to you! The officers came up with a tentative calendar of events to outline the semester. Please keep in mind these events and dates may change, any changes will be reported in the signal and also on the student list serve.

<i>Date</i>	<i>Item, Venue, and Time</i>
Wednesday, January 28 th	IEEE Student Meeting at 4 pm in ENB 108 with Sheila Scott from the Career Center.
Every Saturday in February Feb. 7 th , 14 th , 21 st , 28 th	PCB Layout Workshop with Mr. Rick Moore. 9am-2pm. Location: TBA
Wednesday, February 25 th	IEEE Student Meeting at 4 pm in ENB 108. Speaker: TBD
Friday, February 26 th	EXPO - Laser Show ENA 105 8am-3pm
Saturday, February 27 th	EXPO - Laser Show ENA 105 8am-3pm
Saturday, March 6 th	FWCS/ PE/IAS / Student Branch Picnic at Riverfront Park
Friday, April 30 th	Spring Senior Banquet Ceremony at MC Ballroom.

Are you an Experienced Electrical Engineer?

If you have more than 10 years experience as an engineer, scientist, educator, technical executive, or originator in the various IEEE-designated fields then IEEE would like you to consider upgrading your membership to Senior level. There is no additional cost to you other than keeping up your IEEE membership dues. Benefits of IEEE Senior Membership include:

- The professional recognition of your peers for technical and professional excellence.
- An attractive fine wood and bronze engraved Senior Member plaque to proudly display.
- Up to \$25.00 gift certificate toward one new Society membership.
- A letter of commendation to your employer on the achievement of Senior member grade (upon the request of the newly elected Senior Member.)
- Announcement of elevation in Section/Society and/or local newsletters, newspapers and notices.
- Eligibility to hold executive IEEE volunteer positions.
- Can serve as Reference for Senior Member applicants.
- Invited to be on the panel to review Senior Member applications.

The requirements to apply for Senior Membership are simply to have 10 years experience with 5 years or significant performance and three references from other IEEE members holding Senior, Fellow, or Honorary Member grade.

Your educational experience is credited toward the experience requirement. A Baccalaureate Degree accounts for 3 years, a Masters Degree accounts for 4 years experience, and a Doctorate Degree accounts for 5 years experience. The requirement of significant performance can be any substantial engineering, responsibility or achievement, publication of engineering or scientific papers, books or inventions, technical direction or management of important scientific or engineering work, recognized contributions to the welfare of the scientific or engineering profession, and/or development or furtherance of important scientific or engineering courses. Your local Membership Development Committee will work with you to obtain the three required references from other Senior, Fellow, or Honorary Members.

If you are interested in applying for Senior Membership Status, email tom_blair@ieee.org with subject line "Request for Senior Membership". Your local Membership Development Committee will forward you the application form.

For current Senior, Fellow, & Honorary members: If you are interested in providing references for Senior membership applications, please send an email to tom_blair@ieee.org and include your name and IEEE number.

Celebrate Engineering 2004 Banquet: Directions to A La Carte Event Pavilion

I-275 From the South Take the Airport Exit (2nd exit after crossing the Howard Frankland Bridge). Follow Highway 60 to Eisenhower Blvd. Follow Eisenhower Blvd. to Memorial Highway. Turn Left onto Memorial Blvd. Follow Memorial Blvd. to Dana Shores Drive. Turn left onto Dana Shores Drive to Pavilion on the right side.

I4 From the East Take the I-275 South Exit and Merge onto I-275 South. Take Exit 20 (Airport Exit). Follow Highway 60 to Eisenhower Blvd. Follow Eisenhower Blvd. to Memorial Highway Turn Left onto Memorial Blvd. Follow Memorial Blvd. to Dana Shores Drive Turn left onto Dana Shores Drive to Pavilion on the right side

I-275 From the North: Take Exit 20 (Airport Exit). Follow Highway 60 to Eisenhower Blvd. Follow Eisenhower Blvd. to Memorial Highway. Turn Left onto Memorial Blvd. Follow Memorial Blvd. to Dana Shores Drive. Turn left onto Dana Shores Drive to Pavilion on the right side.



Brain Teaser Challenge Column

By Butch Shadwell

January BTC Solution At the time I am writing this I have received seven correct answers for this BTC. Last month I was describing a very vivid dream in which "...I thought I would make a fire start magically. ...(using) a 9 volt alkaline battery, ...(with) an output impedance of about 18 ohms. ... my medieval self thought about taking the battery and attaching a length of wire to make a heating element with which to light a fire. Unfortunately, ...I couldn't remember what resistance the wire should be to get the most power out of this battery to generate heat in my little wire fire starter. ...What is the optimal resistance of my older heating coil?"

There are a number of mathematical proofs for the answer to this problem, but I am a little pressed today so I am not going to offer any of them. Basically, if you understand that you get maximum power transfer when the source impedance matches the load impedance, then it is obvious that the coil must be 18 ohms too. Based on all of the good answers I got I think most of you already knew that.

February BTC At the U.S. Naval Academy this time of year is known as the dark ages. It is often very cloudy and cold and with the constant chill, the campus has a generally glooming look about it. One good thing about this weather was that we had fewer parades than in the warmer months. In the 60's and 70's we used to carry the M1 Garand with fixed bayonets for parades, about 11 pounds. With the white gloves and an oily piece, it was often challenging.

The traditions and lore of the U.S. Navy, and the Academy, help to build the esprit de corps that makes our navy the best in the world. You may not know that Albert Abraham Michelson was a Naval Academy grad and later taught physics there. In case that name doesn't ring a bell, Michelson did the first really accurate measure of the speed of light and later invented the Michelson interferometer.

So, if Fred is traveling north from Texas at 2000 mph and Jim is traveling southwest at 2000 mph from New York and then Jim shines a laser of 640 nm wavelength at Fred, what wavelength does Fred perceive?

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.

USF 9th Mini-Circuits EE Projects Poster Presentation – A Report

By Dr. Rudy Henning, EE Department, USF

On December 5th USF conducted its Ninth Mini-Circuits E.E. Projects Poster Presentation at which judges from industry and academia together judged last fall's projects on such factors as presentation, organization, content, and completeness. Students whose projects were judged to be of superior quality received Special Recognition. The following EE students (listed in alphabetical order) received Special Recognition at last fall's presentation: **Kharlie Barnaby, Evan Brewer, Carrie Jadus, Lawrence Mastromoro, Daniel Quintela, William Rothenbach, Joshua Schumacher, and Anthony Shields.**

Important by-products of these events are: 1) the opportunity for students to meet their counterparts in industry and to experience the task of preparing for, and then making their oral presentation to an unknown audience; 2) opportunity for industry's engineers to observe engineering students prior to their graduation and to meet university faculty; and 3) an opportunity for students, faculty and practicing engineers to meet each other. We are grateful to Mini-Circuits for their assistance that makes possible the effective bridging of the gap between academics and industry.

The next (10th) Poster Presentation will be held on April 23, 2004. If you are interested in becoming a judge in the future, send an E-Mail to henning@eng.usf.edu advising him of your interest. Enclose a very brief summary of your professional experience, (degree(s), years of professional practice, and/unique honors and assignments.)

February 2004 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3 5:30 pm IEEE FWCS Excom Meeting TECO Hall, Tampa	4	5	6	7 9am-2pm PCB Layout Workshop USF
8	9	10	11	12	13 5:30-10pm Celebrate Engg 2004 Banquet, A La Carte Event Pavilion	14 9am-2pm PCB Layout Workshop USF
15	16	17	18	19 6pm: Joint MTT/AP/ED And SP/COMM Meeting	20 11:30 am Life Member Chapter/Section Meeting, TECO Hall, Tampa.	21 9am-2pm PCB Layout Workshop USF
22	23	24	25	26 11:30 am PES/IAS Annual Engineers Week Luncheon Teco Hall, Tampa	27 9am-5pm USF Engineering EXPO, Tampa Campus	28 9am-5pm USF Engg EXPO TampaCampus 9am-2pm: USF PCB Layout Workshop
29						

Institute of Electrical and
Electronics Engineers, Inc.
Florida West Coast Section
3133 W. Paris
Tampa, Florida 33614



Sections Congress 2005 is coming to Tampa!

NON PROFIT
ORG
U.S. POSTAGE
PAID
TAMPA, FL.
PERMIT
No. 1197

DATE SENSITIVE MATERIAL. DO NOT DELAY

Change of address? IEEE Web Contact Update <http://www.ieee.org/membership/coa.html>

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