IEEE The Open Channel

Newsletter for the Hampton Roads Section of the IEEE
The Institute of Electrical and Electronics Engineers, Inc.

http://www.ewh.ieee.org/r3/hampton_roads/
http:/www.ieee.org/hrs

Volume 1 – No. 6 **September 2004**

Arc-Flash Studies

Speaker: Glenn Walls, P.E.
Power Professional Systems, PLLC
2417 Entrada Drive
Virginia Beach, VA 23456
757.721.0319

Date/Time: Thursday, September 16, 2004 at 6:30 PM
Location: Kaufman Hall 103, Old Dominion University **757.683.3000**
5115 Hampton Boulevard., Norfolk, VA 23529
Cost: Members and guests $20; Students $10

Mr. Glenn Walls will speak on equipment for newly established arc flash ratings as required by NFPA 70 Article 110.16 (NEC) and NFPA 70E Article 2-1.3.3 (Standard for Electrical Safety Requirements for Employee Workplaces). This is new to the NEC and will be required by both local and federal projects in the near future and is also being enforced by OSHA as pertaining to electrical workplace safety requirements.

Biographical sketch: Mr. Glenn Walls [glennwalls.pps@cox.net] is a registered electrical engineer and licensed master electrician with 30 years hands-on and design experience. As an engineering consultant with Power Professional Systems, Mr. Walls performs load flow, short circuit, selective coordination, and arc-flash studies using state-of-the-art customizable computer software.

Directions to Old Dominion University:
Directions from the Peninsula:

1. I-64 E until you reach exit 276, VA-406/NAVAL BASE/TERMINAL BLVD. This exit is about nine miles away once you emerge from the Hampton Roads Bridge-Tunnel.
2. Once on the exit ramp, stay right as it splits into a "Y". Once on 564, stay right again, following the first exit for "Terminal Blvd."
3. Continue straight through two traffic lights, and at the third light, turn left onto Hampton Blvd.
4. From here directions change based on the location of the event. Please see below:
7. Follow Hampton Blvd. to 49th Street (approximately 3 miles)
8. Turn right on 49th Street
9. Turn left onto Elkhorn Ave.
10. Parking is in Lot #27 on Elkhorn Ave.
11. The meeting will be held in the atrium of Kaufman Hall.

Reservations: Please forward RSVP to Brent Phillips [bphillips@ieee.org] or William LaBelle [757-619-9050, w.labelle@ieee.org] if you have questions about the meeting.
Checks: Checks should be made out to IEEE and brought to the meeting.

Oct 21 *INCOSE joint meeting* ***Nov 18*** *TBD*

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2004 IEEE Executive Committee
Hampton Roads Section

CHAIR (Acting): William Clayton
w.clayton@ieee.org

VICE-CHAIR (Acting): Brent Phillips
bphillips@ieee.org

SECRETARY: Brent Phillips
bphillips@ieee.org

TREASURER William Clayton
w.clayton@ieee.org

OPEN CHANNEL EDITOR: William LaBelle
757-619-9050
w.labelle@ieee.org

MEMBERSHIP: William LaBelle
757-619-9050
w.labelle@ieee.org

PROFESSIONAL DEVELOPMENT:

STUDENT ACTIVITIES:

EDUCATIONAL ACTIVITIES:

AWARDS: William Clayton
w.clayton@ieee.org

WEB PAGE:
http://www.ewh.ieee.org/r3/hampton_roads/
http:/www.ieee.org/hrs

WEB MASTER: William Clayton
w.clayton@ieee.org

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All materials for THE OPEN CHANNEL are due by the 25th day of the month preceding the issue month. Address all correspondence to:

William LaBelle
6224 Glenrose Drive
Suffolk, VA 23435
Voice: (757) 619-9050
E-MAIL: w.labelle@ieee.org
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Letter from the Editor

Dear Colleagues,

By the time you receive this a new academic year will have begun. I hope you summer was enjoyable.

During the summer the section lost two of its officers. Mr. Tim Gavin, HR Section Chair, took a new position in Buffalo, New York. Dr. Robert Dawes, HR Vice-Chair, followed his wife to Texas. They both contributed to the successful operation of the section during their tenure and will be missed.

After much discussion among the remaining officers, Mr. William Clayton and Mr. Brent Phillips accepted the positions of Chair and Vice-Chair, respectively. They will perform these duties in addition to their elected position.

To our student membership: SouthEastCon2005 is not that far away. It is time to begin writing papers and designing cool web-sites, t-shirts, and of course the hardware design for the year. Students should visit the SouthEastCon2005 for student program information [http://sec05.nova.edu/student.htm]. By the way, the conference will be held in Fort Lauderdale, Florida. Talk to your student branch counselor and get started.

Sincerely,
William LaBelle

Become a Senior Member

- Senior Member drive
Of the 450 of the sections active membership hold a grade of 'Member' almost 400 may be eligible for upgrade. Information on requirements for elevation from 'Member' to 'Senior Member' can be found at http://www.ieee.org/organizations/rab/md/smprogram.html.

Robotics – *John Platt*

Twenty years ago, the field of Robotics was galvanized by the creation of an IEEE Journal devoted to the topic. We now have the opportunity to do the same for the field of Automation.

In July, the IEEE Robotics and Automation Society premiered IEEE Transactions on Automation Science and Engineering (T-ASE), a new journal devoted to publishing foundational research addressing the scientific methods and technologies that improve efficiency, productivity, quality and reliability across today's most important industries.

In doing so, the journal will reach beyond the mass-production roots of Automation to address topics in biotechnology, pharmaceutical, and health; construction, transportation, and security; Manufacturing, maintenance, and supply chains; home, laboratory, and service; business and software; and food handling and processing.

A free preview of the first issue's contents is available online at http://www.ieee.org/t-ase. There, you'll find a copy of the journal's first editorial, plus the first page of each paper from the premier issue.

IEEE members are invited to become charter subscribers to T-ASE for US$15, or US$17 for print plus electronic access to the online version of the journal as soon as issues become available in IEEE Xplore(R).

Members can also subscribe to the IEEE RAS Package. Receive both T-ASE and IEEE Transactions on Robotics for the combined price of US$25 -- or just US$29 for print and online access. Subscriptions can be added at http://www.ieee.org/addservices or http://www.ieee.org/renew.

For more information on IEEE Transactions on Automation Science and Engineering, visit http://www.ieee.org/t-ase.

IEEE Educational Activities (4th Quarter 2004)

MESSAGE FROM MARIO GONZALEZ, CHAIR, IEEE/EAB ACCREDITATION POLICY COUNCIL

Dear IEEE Colleagues,

Accreditation plays an important role in the improvement of the quality of engineering education. My purpose in sending you this note in my role as chair of the IEEE/EAB Accreditation Policy Council is twofold. The first is to highlight the importance of the key component in the accreditation process: the program evaluators who visit campuses as part of a team and provide recommended accreditation actions to ABET. The second is to provide a reference if you are interested in becoming a program evaluator. You can find information about the entire accreditation process at the IEEE accreditation web site: http://www.ieee.org/organizations/eab/apc/accreditation_ieee.htm

ABET and IEEE strive to produce an even split in the representation of evaluators who participate in accreditation visits: half from academe, and half from industry and government. Information about the application deadline and about how to apply to become a program evaluator is available at http://www.ieee.org/organizations/eab/apc/ctaa/tacinfo.htm. The deadline for 2005 is November 15, 2004. For questions about accreditation or to indicate your interest in becoming a program evaluator, please contact eab-accred@ieee.org.

Mario Gonzalez
Chair, IEEE/EAB Accreditation Policy Council

IEEE VIRTUAL MUSEUM PROGRAM CONTINUES TO THRIVE.

The IEEE Virtual Museum, the History Center's informal education site, has added still another exhibit to its "halls": *Let's Get Small: The Shrinking World of Microelectronics* examines the continued process of miniaturization throughout the 20th century. The museum also added another recognition to its long list of critical kudos, being a "Web Site Report" pick on *Working Knowledge for Business Leaders*, the on-line magazine of the Harvard Business School. Visit the Harvard Business School's report at http://hbswk.hbs.edu/web-review.jhtml?id=4294&t=innovation

Visit the new museum exhibit at http://www.ieee-virtual-museum.org/exhibit/exhibit.php?id=159270&lid=1

IEEE & THE SCOUTING MOVEMENT: WORKING TOGETHER TO ATTRACT STUDENTS TO IEEE AND THE ENGINEERING PROFESSION

IEEE Volunteers and Staff assembled a Peer Review Team, organized by Ralph W. Russell II, of Richmond, Va., USA-based company Dominion, lending their time and expertise to help the Boy Scouts of America (BSA) update their Electricity Merit Badge

Pamphlet which had not been revised since 1996. Specifically, the team reviewed the electrical history, safety, terminology, and electrical experiments outlined in the pamphlet. Significant suggestions for improvement, corrections and updates were made. The listing of IEEE and the IEEE Virtual Museum were also added to the pamphlet as additional resources.

The EAB Pre-College Education Coordinating Committee became involved in the review process as a result of a formal partnership proposal submitted to the BSA this past April. The Electricity Merit Badge pamphlet review is the first BSA activity completed by the EAB committee. The IEEE TAB CPMT Society conducted the peer review process. When asked if this is an activity the group would engage in again, Russell said, "Yes. We were recently asked to do a peer review of the Computer Merit Badge as well." Discussions regarding the partnership between IEEE and the BSA will continue as it is still to be finalized. The IEEE also plans to work with the global World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts to form partnerships.

To read the full article, please visit http://www.ieee.org/organizations/eab/newswire.htm

THREE MORE HISTORIC ACHIEVEMENTS EACH NAMED AS AN IEEE MILESTONE.

The IEEE History Center's program most closely geared to IEEE Sections is the Milestones in Electrical Engineering and Computing. A Section proposes a local achievement of significance, prepares a carefully documented nomination, and, if approved by the IEEE History Committee and IEEE Executive Committee, dedicates a bronze plaque recognizing the honor. At their June 2004 meeting, the ExCom approved three more Milestones recommended by the History Committee, from three different Sections in three Regions, covering technologies from power to software almost 90 years of technology history. This brings the total number of new Milestones this year to seven, and the total in the program to more than 60. The newest additions are:

1) LEMPEL-ZIV DATA COMPRESSION ALGORITHM, 1977 (IEEE ISRAEL SECTION, R10)
2) CERN EXPERIMENTAL INSTRUMENTATION, 1968 (IEEE France Section, R8)
3) POWER SYSTEM OF BOSTON'S RAPID TRANSIT, 1889 (IEEE Boston Section, R1)

All three sections are planning fall dedication ceremonies. Visit http://www.ieee.org/organizations/history_center/milestones_program.html to learn more about the Milestones Program in general and also about these specific dedications as more information becomes available.

ABOUT IEEE EDUCATIONAL ACTIVITIES

The IEEE Educational Activities Board is responsible for coordinating the educational activities of the IEEE. The volunteer and staff members of IEEE Educational Activities carry out this responsibility by developing educational programs to ensure (1) The technological literacy of pre-college students, (2) the continuous maintenance and improvement of engineering education programs through active participation in accreditation activities, and (3) the development of continuing education products and services that serve the professional development and lifelong learning needs of electro-technology professionals worldwide. For more information, visit http://www.ieee.org/organizations/eab/ or email education-services@ieee.org.

ABOUT THE IEEE HISTORY CENTER

The IEEE History Center is a staff unit of IEEE that is located not at the IEEE Operations Center, but on the nearby New Brunswick campus of Rutgers, the State University of New Jersey, which cosponsors the Center's activities. The Center's mission to preserve, research, and promote the legacy of IEEE technologies is overseen by the IEEE History Committee, a standing committee of the IEEE Executive Committee. Since most of the activities in carrying out this mission are educational in nature, the Staff Director of the History Center reports to the IEEE Managing Director for Educational Activities, and Center staff work closely with EAD staff on many programs. Those interested in more information are invited to look at the Center's website (http://www.ieee.org/history_center) or to email the Center at history@ieee.org.

Brain Teaser Challenge Solution *by Butch Shadwel*

July 2004

The timing is such that I haven't received any answers to the last BTC as I write this. It was a very easy one so maybe some just didn't want to bother. As you may recall as result of Dr. Pepper research I needed to know; "the equation for the cross-over frequency of a simple one pole RC filter. If I want the knee (- 3db) at 5 Hz and the capacitor is 1 uF, what should my resistor be?"

I must have been really sleepy, to have left that one as simple as that. Of course the equation is fc=1/(2*pi*R*C). Solving for R, we have R=1/(2*pi*f*C), which makes the answer 31.9 Kohms. As you all know this is the point where the resistive component and the capacitive reactance are equal.

August 2004

Over the years I have come to depend on these columns as a sort of therapeutic outlet. Some place where I can vent my frustrations freely, without fear of reprisal of unfair judgment. Maybe I was wrong about that?

Anyway, I don't think we've ever discussed my interest in thermal emission spectroscopy. TES, as we like to call it, is a form of orthogonal imaging. That means that the value of a spatially displaced pixel is determined by the specific combination of wavelengths in the energy that illuminates it. Sounds a lot like color TV. However, in this case, specific spectral content is more important that intensity. It is a form of qualitative analysis.

In a recent sensor design I used a quantum well infrared photo-detector, or QWIP. In order to test the detector, we illuminated it with an IR LED at 1 meter distance, with the sensor in the center and perpendicular to the transmission axis of the LED. Our QWIP has an area of 0.1 cm2 and the LED emits 20 mw/Sr. With a photo-responsivity at this wavelength of 0.6 A/W, what current should we see from this detector during this test?

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.

IEEE Events and Announcements

Technology for Life - North Carolina Symposium on Biotechnology and Bioinformatics
The Eastern North Carolina Section of the Institute of Electrical and Electronics Engineers (IEEE) is hosting a conference, 'Technology For Life': North Carolina Symposium on Biotechnology and Bioinformatics, to be held at the North Carolina Biotechnology Center on Alexander Drive in Research Triangle Park, North Carolina, from October 13 to October 15, 2004. The purpose of this regional conference is to enable North Carolina-based scientists, scholars, and engineers to present their leading-edge research in the areas of bioinformatics, telemedicine, and biomedical engineering before a national audience, and to enable IEEE members and students to explore opportunities for professional development in these fields. More information can be found at the conference web site:

http://ewh.ieee.org/cmte/tech4life/

2004 IEEE SOI Conference
This annual meeting of engineers and scientists provides a forum for open discussion in all areas of silicon-on-insulator technologies and their applications. The conference is being held at the Francis Marion Hotel, Charleston, SC October 4th – 7th, 2004.

http://www.soiconference.org/

2004 8th IEEE International Symposium on Wearable Computers (ISWC)
ISWC 2004, the eighth annual IEEE International Symposium on Wearable Computers, will bring together researchers, product vendors, fashion designers, textile manufacturers, users, and all other interested parties to share information and advances in wearable computing. We invite you to attend ISWC 2004 and submit to one or more of the following categories: papers, posters, demonstrations, tutorials, and exhibits.

ISWC 2004 will be held from October 31 through November 3 in Arlingon, VA (near Washington, D.C.). It will be co-located with the Third IEEE and ACM International Symposium on Augmented Reality and Mixed Reality (November 2 - 5) to bring together the wearable and MR/AR communities.

http://www.cc.gatech.edu/ccg/iswc04/

2004 8th International Symposium on Mixed and Augmented Reality (ISMAR)
The International Symposium on Mixed and Augmented Reality is the premier forum in the field. A series of independent conferences on Augmented Reality and Mixed Reality started in 1999, and has led to a joint symposium in 2002, This year we are proud to present the third installment of the series, the 3rd IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR04).

The symposium will be held from Nov 2-5, 2004, in Arlington, VA (near Washington, DC). It will be co-located with the 8th IEEE International Symposium on Wearable Computers, ISWC04 (Oct 31-Nov 3, 2004), to bring together the MR/AR and wearables communities. We invite you all to participate in this great event for the exchange of new ideas in this exciting field!

http://www. ismar04.org/

IEEE Southeast Conference 2005 (SEC 2005)

Ft. Lauderdale, Florida, April 8-10, 2005

http://sec05.nova.edu/

*** Call for Papers (Technical Program/Proceedings)***

The SoutheastCon 2005 Program Committee invites prospective authors to submit original papers on all aspects of engineering, science, and technology of current interest. Papers must not have been published or presented elsewhere. Both full-length refereed papers and abstracts of unrefereed papers are solicited. The conference's Technical Program is divided into 10 tracks:

- Electrical Engineering (1 & 2) - General Engineering
- Communication & Telecommunications - Networking & Distributed Systems
- Information Systems (General) - Information Systems (Database & ERP)
- Mobile Devices & Communications - Computing
- Education

List of tracks, potential topics, and track chair(s) is available via:
http://sec05.nova.edu/technical_program_track_list.htm

Local Announcements

Old Dominion University | Frank Batten College of Engineering & Technology | www.eng.odu.edu

2004 - 2005 Technology Tour Series

The Batten College of Engineering and Technology's, *Technology Tours****, provide executive overviews of research and development capabilities of our College through interaction with engineering faculty and researchers. These tours include campus facilities in Kaufman Hall and our satellite Enterprise Centers and provide the participant a mechanism for determining whether these resources can be utilized in their business. At the same time, gain a better understanding of how we educate your future employees for a more informed targeted hiring of co-ops and full time employees.***

In 2004-2005, the tours have been designed with executives and technical management in mind. The tours are concise, requiring only a half-day time commitment of participants and focus on specific subject matter. There is no cost for attending.

Thursday, September 16, 2004- Civil and Environmental Focus
Thursday, November 18, 2004- Manufacturing and Design Focus
Thursday, March 3, 2005-Laser Applications and Electronics focus
Thursday, April 7, 2005- Aerospace Focus

For detailed information and to register online go to http://www.eng.odu.edu/cc_techtours.htm
or call Clair Dorsey at 757-683-4478

> It was very impressive to see first hand the involvement of Old Dominion in the cutting edge research that is going on in Hampton Roads. It is equally gratifying to see that some of the results of this research have application in industries such as ours.

THE POWER OF ENGINEERING

Virginia Engineers Conference

On-line Web Registration Up & Running

September 21-23, 2004, Williamsburg, VA

Reserve September 21-23, 2004, on your calendar! That is when the VA Society of Professional Engineers and the American Council of Engineering Companies of Virginia will host this conference in Williamsburg at the Radisson Fort Magruder Hotel and Conference Center. You can earn up to 13 PDH credits at seminars that will be conducted all day Wednesday and Thursday in three tracks - Professional, Business and Technical. A golf tournament will preceed the seminars on Tuesday at the Kingsmill Resort. Speakers are being lined up now for the 2004 conference and will be finalized soon. **Put those dates in your calendar and plan to attend.** Updated information will be posted in this newsletter, on our home page at www.vspe.org, and on http://www.virginiaengineersconference.org.
Need more information? Contact Leigh Dicks at vspe@aol.com or 804-673-4545.

SAME Hampton Roads Post - Fall 2004 Scholarship Golf Tournament

When: Thursday, September 23, 2004

Where: TOURNAMENT PLAYERS CLUB OF VIRGINIA BEACH

Cost: $75 per person (Green Fees normally $80+!)
Registration includes: Green Fees, Cart, Range Balls, Cookout, Drinks & Prizes!
$25 per non-golfer to come out and join us for the Cookout & Drinks!

Tee Time: 1300 (1:00 PM) Shotgun Start (Participants must be at clubhouse NLT 1230)

All American Backyard Cookout featuring - hamburgers, hot dogs, chicken, corn on the cob, baked beans, assorted salads, desserts & drinks - starts after golf ? around 5:30 pm.

Format: Four-Man Florida Best Ball. Mulligan tickets will be sold.

Questions: Contact LCDR Roger Wykle at (757) 852-3481 or e-mail at or Phillip Koetter at (757) 321-1222 or phillip_koetter@urscorp.com.

Register: RSVP with the flyer you can download at http://posts.same.org/hamptonroads/Golf_Flyer_Fall_04.doc by fax, mail or e-mail above by COB Friday, September 17, 2004

Reserve The Date For:

ASNE DAY 2005

WHEN: Tuesday, April 26, 2005
Wednesday, April 27, 2005

HISTORICAL EXPERIENCE: 2000 + Attendees, Guest Speakers, 150 + Exhibitors, Panel Discussions and Technical Paper Presentations

WHERE: Pavilion Convention Center
Virginia Beach, Virginia

POC: Exhibits - Megan Sinesiou
msinesiou@navalengineers.org.com

Information - Kurt Nelson
knelson@qedsysinc.com

Naval Engineering for Joint & Coalition Rapid Maritime Response

September 2004 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	**2**	**3**	**4**
5	**6** *Labor Day*	**7**	**8**	**9**	**10**	**11**
12	**13**	**14**	**15**	**16** *IEEE HR Meeting*	**17**	**18**
19	**20**	**21** *Virginia Engineers Conference*	**22**	**23** *SAME HR Post – Fall Golf Tournament*	**24**	**25**
26	**27**	**28**	**29**	**30**		

October 2004 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	**2**
3	**4**	**5**	**6**	**7**	**8**	**9**
10	**11** *Columbus Day*	**12**	**13** 'Technology *For Life' Conference*	**14**	**15**	**16**
17	**18**	**19**	**20**	**21** *IEEE HR Meeting*	**22**	**23**
24	**25**	**26**	**27**	**28**	**29**	**30**
31 *Halloween*						