



# THE POCKET SCOPE



*The Institute of Electrical and Electronics Engineers, Inc.*

Volume 52, Number 12

August 2002

## SCOPE NOTES

### August Houston Section News

**Where:**  
HESS (Houston Engineering and Scientific Society)  
5430 Westheimer @ Yorktown

**When:**  
Thursday, September 26, 2002  
6:00 - 6:30 p.m. Social  
6:30 - 7:30 p.m. Dinner  
7:30 - 8:30 p.m. Speaker

**Cost:**  
\$FREE - IEEE Members with 48-hour advance reservations.  
\$20.00 - non-members  
\$5.00 - students  
Call (713) 207-IEEE to make your reservations.

See Page 2 for the Continuing Education Schedule!

IEEE WEB ADDRESS  
[http://  
\(www.ieee-houston.org\)](http://www.ieee-houston.org/)

IEEE Houston Section  
P.O. Box 460014  
Houston, Texas  
77056-8014



## The Chairman's Message

Donald Dunn

Our first section meeting of the year will be on September 26, 2002. The speaker for our September meeting will be Thomas P. O'Brien, P.E. Since graduating from Texas A&M, Tom O'Brien has worked in aircraft design and manufacturing, data processing, airline reservation systems, business software development, simulator development, electronic commerce, and spacecraft software. He is currently developing software requirements specifications for the Space Shuttle Upgrades project. The topic of discussion at the section meeting will be "Bell Telephone Patents, 1874-1884".

The Houston Section CED program will start back up in October of this year with several courses that cover new and exciting topics. Please take some time and visit the web site to see what will be offered this year. In addition, the volunteer organization of the IEEE is looking for individuals that would be interested in any capacity within the Houston Section and officer positions within our Technical Society Chapters (i.e. Power Engineering, Computer, Communication & Industry Applications). Please take the time to consider volunteering in some capacity; the return on time invested is well worth it.

Our employment section on the IEEE Houston Section website is growing. Take the time to visit the site and forward the information on to individuals within your companies that are seeking IEEE engineers <http://www.ieee-houston.org/>. Again, this feature is a service for the IEEE membership within the Houston Section and is at no cost to the individuals or companies placing the basic ads.

As always, we are looking for members that are interested in becoming a Senior Member in the IEEE. If you meet the following criteria: for elevation to Senior Member status, ten years of professional practice including five years of significant performance, and references (See the nominator letter and application form for clarification on the IEEE website) or if you know an IEEE member who qualifies for Senior Membership, I would like you to nominate him or her by forwarding their nomination to one of the Houston Section Excom members. If you qualify and are not a senior member please reply to one of the Section Excom members.

The Executive Committee and I look forward to your feedback and comments. We have received numerous comments and suggestions. Keep them coming!!! While we may not be able to implement them all immediately we certainly will make an effort. Thanks for taking the time to forward your feedback.

## IEEE CONTINUING EDUCATION ON DEMAND

## 2002-2003 REGISTRATION FORM

Name:

Company:

Mailing Address: (where certificate will be delivered)

City/State:

Zip:

Email:

Telephone Voice:

Telephone Fax:

IEEE Membership Number:

Mail a copy of your completed registration form along with your check payable to **IEEE CED SEMINARS** at the following address:

IEEE CED SEMINARS  
BEARTIZ REY  
ABB Power T&D Company  
P.O. BOX #42802  
HOUSTON, TX. 77242

Registration receipts will be distributed **at the seminar**.

For a cancellation refund, telephone by the Friday before the seminar:  
Contact Beatriz Rey at (713) 821-4027

IEEE Continuing Education On Demand Completion Certificate with Continuing Education Units (CEUs) is provided after receipt of both nightly questionnaires.

Please check the IEEE Houston Section website for the latest schedule and course information.

[http://\(www.ieee-houston.org\)](http://(www.ieee-houston.org))

## IEEE CONTINUING EDUCATION ON DEMAND

The purpose of IEEE Houston Section Continuing Education On Demand is to provide a two-year repeating program sequence of practical industrial power application topics that supplement the daily work activities of the practicing graduate electrical engineer.

The seminars are intended to stimulate further study and discussion for learning continuance throughout the working career. Topics apply to heavy industries: oil and gas, petro-chem, cogen, pulp and paper, etc.

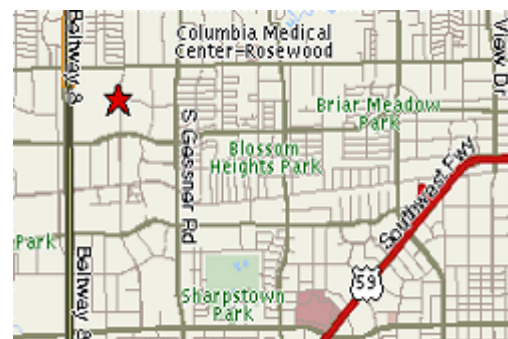
Instructors are application engineers, manufacturing specialists and expert consultants who provide a blend of diverse engineering perspectives.

The cost of each seminar is \$120.00 for IEEE members. "Early Signup" is \$60.00 and the **check must be received the Friday before** the seminar start date. The cost for non-IEEE members is \$200.00. Signup the week of the seminar does not guarantee seminar presentation documents or meals. For IEEE membership application information, contact Beatriz Rey at (713) 821-4027.

The following 2002-2003 seminar schedule defines the topics, dates and times. A course syllabus is available on request. Minimum class size is twenty for each seminar. Seating is limited and filled on an as received basis. Presentation documents are provided. A buffet is served from 5:00PM-6:00PM.

Seminar location:

ABB Power T&D Company  
P.O. BOX #42802  
HOUSTON, TX. 77242  
Contact Beatriz Rey  
(713) 821-4027



Seminar Title	Code	Date	Amount
Residual Bus Auto Transfer System	111	Oct. 1/2	\$
Symmetrical Components	202	Oct. 15/16	\$
Elect. Safety In Ind. Workplace	921	Oct. 29/30	\$
Harmonics Theory And Applications	502	Nov. 12/13	\$
Harmonic Filters	503	Jan. 28/29	\$
CT/PT Application	308	Feb. 11/12	\$
Directional Power Current Relaying	307	Feb. 25/26	\$
Solid-State Starters	504	Mar. 11/12	\$
Relays and Meters Com. Sys. Integration	112	Mar. 25/26	\$
51V Gen Relay, Standby Gen. & UPS	316	Apr. 8/9	\$
Substation Design Appl. And Fund.	312	Apr. 22 /23	\$
Total Paid:			\$

Enter amount for each seminar:

IEEE member registration:	\$120.00
IEEE member early signup:	\$ 60.00
Non-member registration:	\$200.00

## Fall of 2002 IEEE Seminar Schedule

**Residual Bus Automatic Transfer System (111)**

**James Bowen / Roy Cossé, Powell Elect. Mfg. Co.**

Oct. 1/2, 2002 6:00-8:50PM

Reviews fundamentals of a traditional transfer scheme. A modern transfer approach provides guidance for enhanced residual transfer scheme applications. [0.5 CEU]

**Symmetrical Components (202)**

**William Nichols, Siemens Westinghouse Technical Services**

Oct. 15/16, 2002 6:00-8:50PM

Reviews basic theory and provides application examples for LL, LG, and LGL faults. Unbalanced voltage concerns are also discussed. [0.5 CEU]

**Electrical Safety in Industrial Workplaces (921)**

**James Bowen, Powell Electrical Mfg. Co.**

Oct. 29/30, 2002 6:00-8:50PM

Modern industrial facility safety concerns and NFPA70E are discussed. [0.5 CEU]

**Harmonic Theory and Applications (502)**

**David Rice, GE Engineering Services**

Nov. 12/13, 2002 6:00-8:50PM

Introduces basic harmonic concepts and typical industrial applications. [0.5 CEU]

## Spring of 2003 IEEE Seminar Schedule

**Harmonic Filters (503)**

**David Rice, GE Engineering Services, and Richard Harlow, Phaseco, Inc.**

Jan. 28/29, 2003 6:00-8:50PM

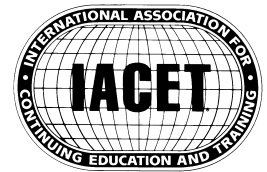
Discusses filter design, implementation, and typical application example concerns. [0.5 CEU]



**IEEE  
Houston  
Section**

**2002-2003**

**Continuing  
Education  
On Demand**

**CT / PT Application Seminar (308)**

**Tony Zhao, Powell Electrical Mfg. Co.**

Feb. 11/12, 2003 6:00-8:50PM

Discusses CT and PT ratings, selection criteria, ANSI Std. Ref. and typ. appl. considerations. [0.5 CEU]

**Directional Power/Current Relaying & Meters (307)**

**William Nichols, Siemens Westinghouse Technical Services**

Feb. 25/26, 2003 6:00-8:50PM

Reviews typical industrial directional power and directional current relaying applications. Directional metering topics are also included. [0.5 CEU]

**Solid-State Starters (504)**

**Harold Haggarty, Benshaw Inc.**

Mar. 11/12, 2003 6:00-8:50PM

Discusses traditional mtr. starting appl. and modern "soft-start" theory, appl. and selection. [0.5 CEU]

**Relays and Meters****Communication Systems Integration (112)**

**Martin Hildreth / Roy Cossé, Powell Elect. Mfg. Co.**

Mar. 25/26, 2003 6:00-8:50PM

Reviews modern concepts and reasons for integrating diff. mfg. meters and relays into one communicating system. [0.5 CEU]

**Generator 51V Relaying, Standby Generator and UPS Selectivity (316)**

**Roy Cossé, Powell Electrical Mfg. Co.**

Apr. 8/9, 2003 6:00-8:50PM

Reviews MV/LV gen. 51V and stdb. gen. concerns. UPS dist. sys. selectivity is discussed. [0.5 CEU]

**Substation Design and Application Fundamentals (312)**

**Donald Sevcik, Reliant Energy HL&P**

April 22/23, 2003 6:00-8:50PM

Reviews theory and appl. design basics. [0.5 CEU]

**Guidelines for Applying IEC Standards to Electrical Distribution Systems (801)**

**Terence Hazel, Schneider Electric France**

April 30/ May 1, 2002 6:00-8:50PM

[0.5 CEU]

## September 12 COMSOC MEETING

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The next meeting of the IEEE Communications Society, Houston Chapter will be held Thursday, September 12th, 2002.

**Please RSVP via e-mail to [Lee Gaspard](#) by 12:00 Noon Wednesday, September 11th. (Please include your company name.)**

**Time and date:** 11:30 AM to 1:00 PM on Thursday, September 12th, 2002.

**Program:** "Bluetooth - Personal Area Networking" (Texas Instruments)

**Abstract:** Bluetooth is a new technology for building wireless Personal Area Networks. Connect your mobile phone, MP3 player, PDA, headset, and printer together wirelessly.

**Location:** Shell Information Center, 1500 Old Spanish Trail Houston, TX

**Lunch:** Lunch may be purchased at the Shell Information Center cafeteria. We'll plan to eat from 11:30 to 12:00 and enjoy the presentation from 12:00 to 12:45.

***PLEASE CHECK THE NEW DRIVING DIRECTIONS!***

[\(click here for driving directions\)](#)

Please send e-mail to [Lee Gaspard](#) for more information (including driving and parking directions), or to reserve a seat at the meeting.

## IEEE Virtual Museum

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Piscataway, NJ -- Thomas Edison didn't invent the light bulb, so why does everyone think he did? What was the first computer? How did the patterns in a Utah cornfield lead to the development of TV? What is the "X" in an X-ray? Why are Alvin and the Chipmunks part of a museum about technology?

The answers to these questions and more are found in the new IEEE Virtual Museum launched at <http://www.ieee.org/museum>. Designed for educators, pre-college students, and the general public, the virtual museum debuted with two exhibits containing audio and video clips, and interactive features: Socket to Me! How Electricity Came to Be and The Beat Goes On: How Sounds are Recorded and Played.

Three more exhibits are in production and are scheduled for release by third quarter 2002. These will explore the different applications of microwaves, the works of Thomas Edison, and contributions women have made to electrical and information technologies.

The IEEE Virtual Museum explores the global social impact of electrical and information sciences and technologies and demonstrates the relevance of engineering and engineers to society. It is supported by the IEEE Foundation, the IEEE Life Members, and the Trustees of the IEEE History Center.

## IEEE-USA NEWS

*IEEE-USA Focuses on Technology Policy Issues in 2002*

By Ralph W. Wyndrum Jr.

IEEE-USA Vice President, Technology Policy  
August 2002

*IEEE-USA, which represents 235,000 U.S. IEEE members, has refocused its efforts on the most urgent technology policy issues facing the United States in today's turbulent world, and is in the process of marshalling its volunteer membership to bring its latest position statements to Congress and federal regulatory agencies.*

*Earlier this year, the IEEE-USA Board of Directors challenged the IEEE-USA Technology Policy Committee (TPC) to develop position statements advancing the interests of its members, technology and our country. The TPC responded before June by developing positions in seven key areas. These positions are now to be delivered in person by IEEE-USA volunteers to key congressional committee chairs and members during the summer recess, and continuing in Washington during the rest of 2002. Where appropriate, the issues will also be addressed to regulatory agencies such as the Federal Communications Commission, the Federal Energy Regulatory Commission FERC, the Food and Drug Administration and the new Homeland Security Department.*

*The top priority issues for 2002 include:*

- " Defining a 10-year plan for accelerated broadband deployment, and the consideration of such technologies and ultra-wide band wireless and Gigabit Ethernet over Fiber*
- " Supporting effective measures for security and critical infrastructure protection.*
- " Advancing research on the reliability of electrical energy systems and the development of distributed interconnection standards*
- " Ensuring funding and programs for public health service IT infrastructure, found severely wanting in the aftermath of Sept. 11*
- " Supporting balanced and effective programming of federal investments in R&D, particularly those supporting computer, IT, communications and networking breakthroughs and advanced development*
- " Ensuring the latest system engineering and technology are brought to bear to improve national aviation safety*
- " Driving the use of the best technology and most fair standards to meet the needs for a world-class voting technology system*

*These positions will be emphasized with our elected representatives and executive branch agencies in the remainder of the year.*

*Other hot issues that will be addressed selectively with appropriate government officials relate to copyright technology controls, the application of trade regulations (ITAR) to technology publications, computer crime, and congressional technology assessment capabilities. For more information, see IEEE-USA's Policy Forum on-line at <http://www.ieeeusa.org/forum>.*

*The TPC reports to the IEEE-USA Board of Directors through me in my role as IEEE-USA vice president for technology policy, and is made up of five volunteer committees covering U.S. policy in communication and information, transportation, energy, medical technology and research and development.*

*We are continually soliciting volunteers, whom we will train and ask to join task forces meeting with congressional, executive and state leaders. We are also soliciting help locally, such as visits with Members of Congress in their district offices, placement of TPC-related news in your section newsletter, and/or inclusion of policy discussions in IEEE technical meetings. You can volunteer as part of our Congressional Advocacy Recruitment Effort (CARE) at <http://www.ieeeusa.org/forum/care>, or by contacting IEEE-USA Government Relations Director Chris Brantley at [c.brantley@ieee.org](mailto:c.brantley@ieee.org).*

## IEEE/MIT Study Program

IEEE members now receive discount on MIT Advanced Study Program Courses

Massachusetts Institute of Technology Advanced Study Program (MIT ASP) has become an IEEE Education Partner. IEEE members can now continue their life long learning with graduate-level, credit courses provided by MIT at a 10% discount. Current ASP courses include Systems Dynamics, a 24-month certificate program, and Economic Concepts for Engineers, a semester-long course.

Offered over the Internet since 1995, the ASP is in its 33rd year of providing courses to off-campus graduates. Taught by MIT faculty, the online delivery takes advantage of the latest in technologies for working engineers to keep pace with developments in their fields or to enlarge their knowledge base. Admission is based on the applicant's academic and professional background.

Applications, course pre-requisites, and systems requirements are detailed at the MIT-supplied website for IEEE members. You must use your IEEE member number to receive the 10% discount.

Enter through the IEEE Educational Partners, <http://www.ieee.org/EduPartners>, and choose MIT from the university partners. To learn more about the IEEE Education Partners Program contact Sasha Eydlin, IEEE Educational Activities, [s.eydlin@ieee.org](mailto:s.eydlin@ieee.org).

## IEEE USA NEWS

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*IEEE-USA NEWS \*\*Building Careers & Shaping Public Policy\*\**  
 Contact: Greg Hill, Member & Electronic Communications Coordinator  
 g.hill@ieee.org, 202 785 0017, ext. 8335 <http://www.ieeeusa.org>  
 IEEE-USA Webzines <http://www.todaysengineer.org>

Thursday, 01 August 2002

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- **VOA AND AFRTS PICK UP VOICES OF INNOVATION RADIO PROGRAM**
- **CALL FOR APPLICATIONS: CISAC FELLOWSHIPS PROGRAMS**
- **READING MATERIAL: NAE BOOK ADDRESSES MANAGING A DIVERSE ENGINEERING WORKFORCE**
- **IEEE-USA STAFF DIRECTOR BEGINS 26TH YEAR WITH ORGANIZATION**

- **WISE INTERNS WRAP UP SUMMER WITH CAPITOL HILL PRESENTATIONS**

The Washington Internships for Students of Engineering (WISE) interns concluded their summer program 29-30 July by presenting their research papers on Capitol Hill in the House Science Committee's hearing room in the Rayburn House Office Building. Five of the twelve presentations were given by IEEE student members, three of whom were sponsored by IEEE-USA. A sixth IEEE student member, sponsored by NSPE, opted to forgo her presentation in order to receive training for a position at a national lab.

Trampas Kurth, an EE major from Kansas State University with an interest in intellectual property and fair use policies, presented his topic, "Digital Rights Management: Protecting Creative Works in a Digital Age."

Max Vilompic, an EE major from Ohio State University interested in cryptography, intellectual property rights and equal access policy issues, researched and reported on the Digital Millennium Copyright Act (DMCA).

Jason Frederick, an engineering science and physics major at Trinity University in Texas, came into the program with an interest in broadband and its potential for bridging the digital divide. His presentation, "4-Gigabit Ethernet Over Fiber Broadband Infrastructure: The Ultimate Solution" addressed one possible solution. For more information on the WISE program, visit <http://www.wise-intern.org/>

- **IEEE-USA PRESIDENT SPEAKS AT DEDICATION OF TENNESSEE ENGINEERING CENTER**

On Tuesday, 30 July, IEEE-USA President LeEarl Bryant spoke to attendees at a dedication ceremony for the new Tennessee Engineering Center (TEC) in Nashville, Tenn. TEC, a \$1.8 million addition to the Cumberland Science Museum, will serve both educational and business interests. The new engineering wing features hands-on exhibits for children as well as a conference center meeting room outfitted with the latest multimedia capabilities. In addition to speaking at the event, Bryant presented the center with a check for \$1,000 on behalf of IEEE-USA. For more information, visit: <http://www.ieeeusa.org/releases/2002/072602pr.html>

- **MARK YOUR CALENDARS: IEEE-USA PRODEVCON & IEEE-USA WORKSHOP SET FOR MARCH 2003**

The 2003 IEEE-USA Professional Development Conference (PRODEVCON) and the IEEE-USA Workshop are set for 27-28 March and 28-30 March, respectively. Both events will be held at the Hilton Seattle Airport, in Seattle, Wash. More information is available on the IEEE-USA Website at: <http://www.ieeeusa.org/conferences/>

- **VOA AND AFRTS PICK UP \*VOICES OF INNOVATION\* RADIO PROGRAM VOICES OF INNOVA-**

**TION**, a daily series of two-minute radio programs about engineers and their accomplishments, will be aired this Fall on the Voice of America (VOA), as well as on Armed Forces Radio (AFRTS). VOICES OF INNOVATION is a new public radio program being coordinated by the American Association of Engineering Societies, of which the IEEE is a founding society. The program is being produced by Jim Metzner, best known for his award-winning program, PULSE OF THE PLANET, which is broadcast on more than 300 commercial and public radio stations. For more information on VOICES OF INNOVATION, visit: <http://www.voicesofinnovation.com>

## IEEE USA NEWS-Cont.

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- **EMPLOYMENT ISSUE ATTRACTS MEDIA ATTENTION**

IEEE-USA President LeEarl Bryant's recent letter to all Members of Congress addressing record unemployment among U.S. electrical engineers and computer scientists has garnered national media attention, including write-ups by THE BOSTON GLOBE, SLASHDOT.COM, and SYSCON Media's JAVA DEVELOPER'S JOURNAL.

IEEE-USA Letter to Congress

<http://www.ieeeusa.org/releases/2002/071202pr.html>

BOSTON GLOBE Article

[http://www.boston.com/dailyglobe2/204/business/Congress\\_asked\\_to\\_review\\_IT\\_field+.shtml](http://www.boston.com/dailyglobe2/204/business/Congress_asked_to_review_IT_field+.shtml)

SLASHDOT.COM Discussion Board

<http://slashdot.org/articles/02/07/25/1356250.shtml?tid=>

JAVA DEVELOPER'S JOURNAL

<http://www.sys-con.com/java/>

- **CALL FOR APPLICATIONS: CISAC FELLOWSHIP PROGRAMS**

The Center for International Security and Cooperation (CISAC), part of Stanford University's Institute for International Studies, is seeking individuals interested in participating in its fellowship programs. Each year, CISAC sponsors several fellowship programs, which select through an annual competition a small number of scholars for training in issues related to international security. An application procedure is required for all individuals who wish to be in residence as visiting fellows, whether they need funding or have independent funding.

CISAC is a multidisciplinary community dedicated to research and training in issues of international security. The center brings together scholars, policymakers, area specialists, business people, and other experts to focus on a wide range of security questions of current importance. For more information, visit: <http://cisac.stanford.edu>.

- **READING MATERIAL: NAE BOOK ADDRESSES MANAGING A DIVERSE ENGINEERING WORKFORCE**

A new book from the National Academy of Engineering (NAE) focuses on managing a diverse engineering workforce. \*Diversity in Engineering: Managing the Workforce of the Future (2002)\* is a collection of papers from a workshop entitled, "Best Practices in Managing Diversity," sponsored by NAE's Committee on Diversity in the Engineering Workforce in October 2001. Established in 1999 to address the disproportionate number of women and underrepresented minorities in the engineering profession, the committee has taken its cue from NAE President Wm. A. Wulf, who noted, "that for the United States to remain Competitive in a global technological society, the country as a whole must take serious steps to ensure that we have a diverse, well trained, multicultural workforce. To read excerpts from the book online and to order, visit: <http://www.nap.edu/catalog/0377.html>

## IEEE Members Needed!!!!

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***Looking for Senior Member Nominations READ THIS SECTION TO BECOME A SENIOR MEMBER IN THE IEEE.***

A goal of our Region is to sponsor as many Senior Members as possible and I am asking your help. The IEEE criteria for Senior Member status is ten years of professional practice including five years of significant performance, and references. (See the nominator letter and application form for clarification on the IEEE website.) If you know an IEEE member who qualifies for Senior Membership, I would like you to nominate him or her by forwarding their nomination to one of the Houston Section Excom members. If you qualify and are not a senior member please reply to one of the Section Excom members. If your are retired and have met the criteria at one time lets get you nominated. Section meetings are the best networking tool to achieve Senior membership. Check the website.

# EXECUTIVE COMMITTEE HOUSTON SECTION IEEE

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The **Pocket Scope** is the newsletter of the Houston Section of the Institute of Electrical and Electronics Engineer (IEEE). The Houston Section address is: IEEE Houston Section, P.O. Box 460014, Houston, Texas 77056-8014.

The **Pocket Scope** is published eight times a year (monthly, September to May, except December). It is distributed to over 3000 professionals in the electrical engineering field in the greater Houston area.

Advertising rates are listed on the IEEE Houston Section website and include publishing in The Pocket Scope, ad on the website, and within the monthly e-mail update.

IEEE members make change of address notices via the IEEE website: [www.ieee.org](http://www.ieee.org).

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THE POCKET SCOPE  
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