

The



# IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

*NJ Section PACE:*

## Engineers Meet:

### Contract Engineering - An Alternate Form of Employment

On Wednesday, November 14, 2007 the North Jersey Section Professional Activities Committee will meet to discuss contracting engineering, AKA job shopping. Members present at the meeting will present their views about contract work and add to the discussion.

#### About the Meeting

This meeting will provide you with the opportunity to discuss contract engineering, the relationship between the contract firm, client company and the contract engineer.

- Opportunities, Demand
- D, S & E High Tech Recruiting Index
- The Function of Supply and Demand Contract Engineering, a 3rd party
- Contract Engineers, Who, What & Why
- Labor Rates Example
- Locating Contract Firms
- Playing the game
- Interviews. Contracts and Negotiations.

You are encouraged to attend and bring your spouse and associates.

#### About the Speaker

Richard F. Tax is a Senior Life Member of IEEE and has worked as a contract engineer for more than 25 years. He is a member of the North Jersey Section Executive Committee and presently the PACE Chair for the Section and METSAC.

He is currently president of the American Engineering Association Inc., a professional organization dedicated to the enhancement of the American Engineering Profession. A more detailed article about Contract Engineering can be found at [http://www.aea.org/pdf/Contract\\_Engineering\\_07.pdf](http://www.aea.org/pdf/Contract_Engineering_07.pdf).

#### All Welcome

Members and students from other professional societies and engineering disciplines are always welcome. We now include members from IEEE, ASME and AEA. For more information about these groups see:

[www.aea.org](http://www.aea.org)  
[www.ieeeusa.org/policy/care/](http://www.ieeeusa.org/policy/care/)  
[www.ieeeusa.org](http://www.ieeeusa.org),  
[www.programmersguild.org](http://www.programmersguild.org)  
[web.njit.edu/~ieeenj/](http://web.njit.edu/~ieeenj/),  
[www.asme.org/sections/northjersey](http://www.asme.org/sections/northjersey)

**Time:** 6:15 PM to 9:00 PM, Wednesday, November 14, 2007.

**Place:** Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500.

**Information:** Paul Ward, (973) 790-1625, PWARD1130 "AT" aol.com.

#### Employment: Mechanical Engineer

Vision Research, a local design and manufacturer of very high speed digital cameras, is looking for qualified engineers to join its design team. Expertise in small product enclosure design, sourcing and finishing is essential. Skills in thermal analysis, modeling and Solidworks design tools are necessary. This person must have relevant industry experience of greater than 5 years to qualify. The ideal candidate would be someone that has worked as a mechanical engineer in an electronic products company. Apply confidentially to Dick Toftness; [rtoftness@visionresearch.com](mailto:rtoftness@visionresearch.com). Vision research is an EOE employer.

## North Jersey Section Seeks Committee Chairs and Volunteers

The NNJ IEEE Section ExCom is seeking new volunteers to help conduct business at the section level for the benefit of its membership in the North Jersey section and surrounding areas. There are a variety of volunteer positions open and available. They range from long-term to short-term, technical to non-technical, leadership or just participatory. All activities have varying levels of time commitment. For Chapter Chairs, you MUST be a member of the corresponding IEEE Society.

If you would like to become involved with volunteering in some of these efforts or positions or just become more informed about what is happening at the NNJ IEEE Section, please contact Dr. Chandra Gupta at [c.gupta "AT" ieee.org](mailto:c.gupta@ieee.org). You can even attend the section business meeting held the first Wednesday of every month to find out more and other volunteer activities that require some help.

Additionally, if interested volunteers would like to get more general information about other activities in our section, visit the North Jersey Section website for newsletter information <http://web.njit.edu/~ieeenj/> or contact Dr. Chandra Gupta, [c.gupta "AT" ieee.org](mailto:c.gupta@ieee.org).

# November 2007

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**Deadline for receipt of material** is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be sent to the Business Manager via e-mail at *k.saracinello "AT" ieee.org* or to *The IEEE Newsletter, c/o Keith Saracinello, 25 Messenger Ln, Ringoes, NJ 08551, (302) 683-7162*.

### IEEE NJ SECTION HOME PAGE

<http://web.njit.edu/~ieeenj/>

### IEEE NJ SECTION NEWSLETTER HOME PAGE

<http://web.njit.edu/~ieeenj/NEWSLETTER.html>

### REPORT ADDRESS CHANGES TO:

IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

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**The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Russell Pepe at (201) 960-6796, rpepe "AT" att.net.**

## IEEE Personal Email

### Alias

The IEEE offers a personal e-mail Alias service in which IEEE members can register or instantly update a personal alias of their choice (subject to availability and on a "first-come, first-served" basis). Messages addressed to the *alias@ieee.org* will automatically be forwarded to the members real Internet e-mail address at their ISP. Over 100,000 members received more than 200 million messages using this service in 2003. See

<http://eleccomm.ieee.org/>.

### Free Virus Scanning

9,000,000 Virus-Infected Messages Detected in 2005!

The virus-scanning feature helps prevent you from receiving viruses in the first place. Attachments within e-mail sent to your IEEE alias will be scanned, and if a virus is found, the attachment will be deleted. An alert is then sent to both the sender and recipient. While the IEEE cannot guarantee that every virus will be caught, the virus scanning software is updated daily. A service like this typically costs \$20 to \$30 per year, but as an IEEE member, it is yours FREE of charge.

### Free Spam Tagging

Members have the option of adding a new feature to help IEEE members manage the amount of unsolicited commercial email (UCE), or spam, they receive. Members who elect to take advantage of this new service have the option of either tagging or blocking possible UCE. The service also now supports black and white listings.

This e-mail forwarding service is available to IEEE members to simplify the myriad number of constantly changing computer e-mail addresses.

You may choose your alias name, but are encouraged to use a construction of your family and given names whenever possible, to make it easier for people to contact you.

### Advantages of a Personal IEEE E-Mail Alias:

- If you change your Internet Service Provider and hence your e-mail address, you only have to send one correction - an update to the IEEE.
- If you change your employer or your location within the company which results in a different e-mail address, you only have to send one update - to the IEEE.
- An e-mail address which is independent of your service provider or employer.
- Only one place to make changes to your e-mail address.
- IEEE aliases are usually easier to

remember and simpler to use than the real address.

- An e-mail address which associates you with the IEEE.

### NJ GOLD & WIE:

## Field Trip to Edison Menlo Park Museum

The North Jersey section GOLD and WIE Affinity Groups in conjunction with Central Jersey section GOLD are jointly sponsoring a field trip to the Thomas Edison Menlo Park Laboratory Historical Site and Museum on Saturday, November 10, 2007. The group will assemble between 1-1:30 PM at the museum entrance located at 37 Christie Street, Menlo Park Section of Edison, NJ 08820, immediately off Route 27 South (Lincoln Highway). The group will be treated to a special guided tour exclusively for the IEEE group.

The tour will conclude at 4 PM and, for those interested, the group will go to the Starbucks located 1/2 mile south on Route 27 at 1-11 Lincoln Highway for a coffee hour to network, mingle, and discuss future IEEE events.

Come join the group and check out this historical site and source of so many great innovations. The museum and tour are free (suggested donation \$2), but registration is **required** to get an accurate count for the tour. Bring a friend and enjoy the afternoon learning and interacting with your fellow members and a chance to win some exciting door prizes.

The museum website and directions are at: [www.menloparkmuseum.com](http://www.menloparkmuseum.com) (732-549-3299) Register by visiting the North Jersey Section GOLD website at [http://ewh.ieee.org/r1/north\\_jersey/gold](http://ewh.ieee.org/r1/north_jersey/gold).

For any questions, contact [northjerseygold@ieee.org](mailto:northjerseygold@ieee.org).

**Time:** Assemble between 1-1:30 PM at the museum entrance, Saturday, November 10, 2007. Tour concludes at 4 PM.

**Place:** Edison Menlo Park Museum, 37 Christie Street, Menlo Park Section of Edison, NJ 08820.

**Information:** Contact [northjerseygold@ieee.org](mailto:northjerseygold@ieee.org).

# IEEE North Jersey Section Activities

## November 2007

**Nov. 7** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at rpepe “AT” att.net.

**Nov. 10** – “Field Trip to Edison Menlo Park Museum”, NJ GOLD, WIE, 1:00 – 4:00 PM, Edison Menlo Park Museum, 37 Christie Street, Menlo Park Section of Edison, NJ. Contact northjerseygold@ieee.org.

**Nov. 14** – “A New Low Frequency Noise Model for Multi-Stack Gate MOSFETs” by Dr. Zeynep Çelik-Butler, NJ EDS/C&S Chapters, 7:00 PM (buffet at 6:15 PM), New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 (dmisra “AT” njit.edu).

**Nov. 14** – “Engineers Meet: Contract Engineering - An Alternate Form of Employment” - NJ PACE, 6:15 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625 (PWARD1130 “AT” aol.com).

**Nov. 16** – “Utility Distribution Systems Technical Series – Power Capacitors & Voltage Regulators Seminar” by Paul Pearce, NJ PES/IAS, 9:00 AM to 2:00 PM, PSE&G - Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ 07080-1192. Ronald W. Quade, PE, (732) 205-2614 or rwquade “AT” ieee.org.

### Upcoming Meetings

**Dec. 12** – “EV-DO Rev. B” – by Qi Bi, NJ VTS Chapter, Time TBA, Alcatel-Lucent, 67 Whippany Rd, Whippany, NJ. Stephen Wilkowski, Lucent Technologies, (973) 386-6487, swilkowski “AT” alcatel-lucent.com, Arthur Greenberg, (973) 386-6673, ahg1 “AT” alcatel-lucent.com. Please see the December Newsletter for details.

**Dec. 14** – “Utility Distribution Systems Technical Series – Part 3”, NJ PES/IAS, see <http://web.njit.edu/~ieeenj/> and December Newsletter for further details. Ronald W. Quade, PE, (732) 205-2614 or rwquade “AT” ieee.org.

**Members and Non-Members Welcome**  
**PLEASE POST**

*NJ EDS/C&S Chapters:*

## **A New Low Frequency Noise Model for Multi-Stack Gate MOSFETs**

On November 14, 2007, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "A New Low Frequency Noise Model for Multi-Stack Gate MOSFETs." The speaker will be an EDS Distinguished Lecturer, Dr. Zeynep Çelik-Butler.

### **About the Talk**

In MOSFETs, high dielectric constant (high-k) materials are developed as possible replacements for SiO<sub>2</sub> as the gate dielectric. Although these materials do overcome the issue of gate leakage current due to increased dielectric thickness for a given equivalent dielectric capacitance, several other problems arise. The talk will cover noise and mobility degradation issues in high-k gate stacks.

A new unified noise model will be presented that accurately predicts the low-frequency noise spectrum exhibited by MOSFETs with high-k, multi-stack gate dielectrics. The proposed multi-stack unified noise (MSUN) model is based on number and correlated mobility fluctuations theory developed for native oxide MOSFETs, and offers scalability with respect to the high-k/interfacial layer thicknesses. In addition, it incorporates the various electronic properties of high-k/interfacial layer materials such as energy barrier heights between different gate layers, and dielectric trap density distribution with respect to band energy and position in the dielectric. For verification of the new model, the low frequency noise, DC and conventional split C-V measurements were performed in the 78-350 K temperature range on HfO<sub>2</sub> n-channel MOSFETs. Using the experimental noise data, the channel carrier number fluctuations mechanism was at first established to be the underlying mechanism responsible for the noise observed at all temperatures considered. Secondly, the normalized noise exhibited a weak dependence on temperature implying that the soft optical phonons, although known to result in mobility degradation, have no effect on the noise characteristics in these high-k gate stack MOSFETs. Finally, the new model was shown to be in excellent agreement with the measured noise in 1-100 Hz frequency range at temperatures of 78-350 K for the gate stacks studied.

### **About the Speaker**

Dr. Zeynep Çelik-Butler is Professor of Electrical Engineering and Director of

Nanotechnology Research and Teaching Facility at the University of Texas at Arlington. She received dual BS degrees in electrical engineering and physics from Bogaziçi University, Istanbul, Turkey, in 1982. She received the MS and PhD degrees in electrical engineering in 1984 and 1987, respectively, from the University of Rochester. She was an IBM Pre-doctoral Fellow from 1983 to 1984, and an Eastman Kodak Pre-doctoral Fellow from 1985 to 1987. She joined the Department of Electrical Engineering at Southern Methodist University in 1987 as an Assistant Professor; was tenured and promoted to Associate Professor in 1993. Dr. Çelik-Butler was the holder of J. Lindsay Embrey Trustee Assistant Professorship from 1990 to 1993. She served as the Assistant Dean of Graduate Studies and Research from 1996 to 1999. She moved to University of Texas at Arlington in 2002.

She served in various technical committees including 1988, 1989 IEEE-IEDM's and Annual Symposia on Electronic Materials, Processing and Characterization (1989 - 1992) and International Conference on Noise in Physical Systems and 1/f Fluctuations (1993, 1999, 2001). She was the General Chair of TEXMEMS II Workshop. She was the co-Chairman for the SPIE Conf. on Noise in Devices and Circuits in the Symp. on Fluctuation and Noise (FaN'2003) and the symposium co-chair for the same symposium in 2005 (FaN'2005). Currently, she is an editor for Fluctuation and Noise Letters.

Prof. Çelik-Butler has received several awards including the University of Texas at Arlington Outstanding Research Achievement Award (2006), IEEE-Dallas Section Electron Devices Society Outstanding Service Awards (1995, 1997), IEEE-Electron Devices Society, Service Recognition Award (1995), IEEE-Electron Devices Society, Distinguished Lecturer Appreciation Award (2006), Outstanding Electrical Engineering Graduate Faculty Awards (1996, 1997, 2001), and SMU-Sigma Xi Research Award (1997). Her research interests include microelectromechanical systems, multi-functional reconfigurable sensors, noise and reliability in nanoelectronic devices. She has four patents, six book chapters, and over 150 journal and conference publications in these fields. Dr. Çelik-Butler's research has been supported by the NSF, SRC, NASA, AFOSR, THECB, Freescale, Legerity, ST-Microelectronics, Texas Instruments, Raytheon Lockheed Martin Aeronautics and ARO.

Dr. Çelik-Butler is a senior member of IEEE, member of Eta Kappa Nu, and the American Physical Society. She is a

Distinguished Lecturer for the IEEE-Electron Devices Society.

### **All Welcome!**

You do not have to be a member of the IEEE to attend.

**Time:** 7:00 PM, Wednesday, November 14, 2007. Free buffet will be starting at 6:15 PM.

**Place:** New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at <http://www.njit.edu>.

**Information:** Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 (dmisra "AT" njit.edu).

## **Call for Fellow Nominations**

Nominations are being accepted for the IEEE Fellows class of 2009. The rank of IEEE Fellow is the institute's highest member grade, bestowed on IEEE senior members who have contributed "to the advancement or application of engineering, science and technology." The deadline for nominations is 1 March 2008.

Senior members can be nominated in one of four categories: application engineer/practitioner, research engineer/scientist, educator or technical leader. The Fellows Web site contains additional information on the nomination process including access to the Fellows Nomination Kit, lists of Fellows who may be available as references as well as the history of the IEEE Fellows program. Please visit the Fellows website at <http://www.ieee.org/fellows>.

## **Want to Host a Leadership Workshop at Your Branch?**

This year, we want to bring the leadership workshop to your branch and hold it individually at your school! The leadership workshop is a great way to educate your branch members on some of the details of IEEE, their roles as students in IEEE, what is happening in the section and region, how they can get involved, and most importantly, training for new officers that were just elected or will be elected in the future.

If you would like to hold one at your branch, just contact the organizer at [northjerseysac@ieee.org](mailto:northjerseysac@ieee.org). We can make arrangements to hold a free workshop at an appropriate date and time.

*NEWS from IEEE Computer Soc.:*  
**IEEE Computer Society  
Announces 60<sup>th</sup>  
Anniversary Awards for  
a Century's Computer  
Contribution**

Washington (2 October 2007) - From a field of 13 prominent candidates, the IEEE Computer Society has selected David L. Parnas of the Software Quality Research Laboratory at Ireland's University of Limerick; and Maurice V. Wilkes, of the University of Cambridge, to receive the one-time IEEE Computer Society 60th Anniversary Award.

The award recognizes an individual or individuals who have been responsible for a fundamental and important computer science and engineering contribution over the past century. Selection committee members paid careful attention to the originality and significance of a contribution, as well as the weight of its impact on computer science and engineering, as well as society at large.

The combined award citation reads: "For their seminal contributions to the discipline of computing. Maurice Wilkes pioneered microprogramming, which enabled very large and complex hardware structures to be implemented reliably and systematically. David Parnas provided insights into making large-scale systems development manageable with the concepts of encapsulation and information hiding, and helped establish software development as an engineering discipline firmly rooted in mathematics."

Parnas is an icon in the software engineering field. He is one of its founders and most influential authors, writing the first papers on program families (now known as product lines) and interface designs. Parnas wrote widely cited papers on synchronization primitives that were very important as examples of certain models such as Petri Nets. His research on information hiding is now widely accepted as the basis of object-oriented and other design methods. Parnas' work on the precise specification of programs and model checking has led to current practices in formal methods and safe systems.

Wilkes designed and built EDSAC (1949), the world's first practical stored program computer, and in 1951 developed the concept of microprogramming. His 1958 EDSAC 2 was the first computer to have a microprogrammed control unit and established the viability of microprogramming as a basis for computer design. Wilkes also developed

Titan, which supported the UK's first time-sharing system and provided wider access to computing resources for university researchers. In a notable design feature, the Titan's operating system provided controlled access based on the identity of the program, as well as or instead of, the identity of the user.

The IEEE Computer Society sponsors an active awards program that recognizes both technical achievement and service to the Society and the profession. In the technical area, awards are presented for pioneering and significant contributions to the field of computer science and engineering. Service awards are presented to both volunteers and staff for well-defined and highly valued contributions to the Society.

To learn more about IEEE Computer Society Awards, visit <http://www.computer.org/awards>.

The IEEE Computer Society is the world's leading association of computing professionals with 100,000 members in over 140 countries. It is also the largest society within the IEEE, which is the world's largest technical professional organization.

Contact: Violet Doan, IEEE Computer Society, [v.doan@ieee.org](mailto:v.doan@ieee.org), (202) 371 0101, ext. 4707.

*NEWS from IEEE-USA:*  
**First IEEE-USA  
Innovation Forum  
Coming in November to  
Help Prepare U.S. Tech  
Leaders to Prosper in a  
Global Marketplace**

Washington (1 October 2007) - Because engineers are our country's principal innovators, and innovation generates economic activity and leads to desirable, high-paying jobs, IEEE-USA will host its first IEEE-USA Innovation Forum at the Fairview Park Marriott in Falls Church, Va., on 6-8 November.

The day-and-a-half forum is designed to promote the innovation process, highlight new technologies and trends, and help scientists, engineers and allied professionals improve their innovative skills. Unlike programs offered by and for business school graduates, the IEEE-USA Innovation Forum is grounded in the experience of successful technology innovators.

IEEE-USA Innovation Institute President Ralph W. Wyndrum thinks the forum will benefit individuals and their organizations in today's globally competitive environment.

"Innovation has been the hallmark of

American engineering," said Wyndrum, who served as IEEE-USA president in 2006. "We need to retain our role as the world's technology leader and innovation incubator. Our forum will help prepare leaders responsible for the innovation of new products and services by sharing the experiences of successful innovators in a coordinated program of interaction, mentoring and networking."

Current and future leaders from industry, academia and government will have the opportunity to learn from a distinguished faculty that includes: Mike Austin, who has served as president and CEO of numerous U.S. steel companies; Alain Rostain, founder and principal of Creative Advantage, a strategic innovation consulting firm; Mauro Togneri, a former president and senior executive of U.S. companies with R&D, sales and manufacturing operations around the world; and Steve Walker, an entrepreneur and former Defense Department engineer who helped develop the ARPAnet packet switching system that evolved into the Internet.

Howard Lieberman, founder and CEO of the Silicon Valley Innovation Institute, will deliver the keynote address.

Attendees will learn to innovate in a team-setting and work through real case studies. Group discussions and exercises will focus on:

- Leadership and culture's impact on innovation
- Large vs. small organizations as foundations for innovation
- The innovation process and how to leverage your style to promote innovation
- Capitalizing on new technologies and processes

The event begins on 6 November with an opening night reception and dinner. The forum starts the next day with a full day of teaching and includes breakfast, lunch and breaks. It will conclude with a half-day program that includes breakfast and a morning break. The cost is \$795 for IEEE members and \$950 for non-members. See <http://www.innovation-institute.org/dcforum/>.

The IEEE-USA Innovation Forum is part of the IEEE-USA Innovation Institute (<http://www.innovation-institute.org/>).

IEEE-USA advances the public good and promotes the careers and public policy interests of more than 215,000 engineers, scientists and allied professionals who are U.S. members of the IEEE. IEEE-USA is part of the IEEE, the world's largest technical professional society with 370,000 members in 160 countries. See <http://www.ieeeusa.org>.

Contact: Chris McManes, IEEE-USA Senior Public Relations Coordinator, (202) 530-8356, [c.mcmanes@ieee.org](mailto:c.mcmanes@ieee.org).



# SAVE THE DATE

## 50<sup>th</sup> ANNUAL IEEE GLOBECOM

### 2<sup>nd</sup> ANNUAL COMMUNICATIONS INDUSTRY FORUM & EXPO

26 – 30 November 2007 • Hilton Washington Hotel • Washington, DC

PLAN TO ATTEND THE PREMIER TELECOMMUNICATIONS EVENT

*Where industry meets to network, exchange ideas, and learn the latest developments*

#### KEYNOTE & PLENARY SPEAKERS INCLUDE (Partial List)



**Matt Bross**  
Chief Technology Officer  
BT Group



**Dr. Jeong Kim**  
President  
Bell Labs at  
Alcatel-Lucent



**Scott McGregor**  
CEO  
Broadcom



**Mark A. Wegleitner**  
Senior Vice President, Technology  
& Chief Technology Officer  
Verizon Communications



**Prof. Wu Hequan**  
Vice President  
Chinese Academy  
of Engineering

#### COMMUNICATIONS INDUSTRY FORUMS

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> DESIGN & DEVELOPERS FORUM  
*9 Sessions*

> TUTORIALS & WORKSHOPS  
*20 Tutorials & 9 Workshops*

#### EXPERIENCE THE INDUSTRY EXPO

> EXHIBITS • Components • Subsystems • Systems • Hardware • Software • Middleware • Test Equipment

#### EXPO EXHIBITORS as of July 2007

- Auerbach Publications - Taylor & Francis Group, LLC
- Cambridge University Press
- Elsevier, Inc.
- Institute for Information Industry, Taiwan  
*(Conference Patron)*
- NIKSUN
- Now Publishers, Inc.
- OPNET Technologies
- Springer
- Telcordia *(Conference Patron)*
- University of Maryland - Engineering
- Wiley Blackwell

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> 9 TECHNICAL SYMPOSIA  
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> 50<sup>th</sup> ANNIVERSARY CELEBRATION  
*IEEE GLOBECOM Panel*  
*Trivia Contest with prizes*

> EntNet @ IEEE GLOBECOM  
*Keynote address*  
*8 Panel Sessions & 2 Tutorials*

IEEE  
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*50<sup>th</sup> Anniversary*  
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REGISTER AT [www.ieee-globecom.org/2007](http://www.ieee-globecom.org/2007)  
BY 31 OCTOBER AND SAVE!



NJ Power Engineering Society/Industry Applications Society  
**Utility Distribution Systems Technical Series**  
**Power Capacitors & Voltage Regulators Seminar**

The PES and IAS Chapters will sponsor a 3-month series of technical seminars on utility distribution systems. This second seminar will be on the topic of Power Capacitors & Voltage Regulators. The session will be held on Friday, November 16, 2007, at PSE&G's Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ. **(Please note this is a change of location from prior seminars.)**

**Topics**

**Power Capacitors - Theory & Application**

- ✓ Purpose of Power Capacitors
- ✓ Basic Theory of Power capacitors
- ✓ Benefits of Power Capacitors
- ✓ Power Capacitor Construction/Design
- ✓ Cap Bank Configurations
- ✓ Cap Bank Switching
- ✓ Overcurrent Protection
- ✓ Overvoltage Protection

**Regulator Theory and Application**

- ✓ Why voltage regulation is required
- ✓ Explanation of Regulator Settings
- ✓ Line Drop Compensation
- ✓ Regulator Types
- ✓ Regulator application for wye and delta circuits
- ✓ Cascading multiple Regulators

**About the Instructor**

Paul Pearce is a licensed Professional Engineer in the State of New Jersey. Paul has worked as a Regional Power Systems Engineer (Applications Engineer) for Cooper Power Systems for seven years. Prior to that Paul spent 9 years as a Distribution Field Engineer/Supervisor at Atlantic Electric and 1 year and 3 years as a Standards Engineer at Atlantic Electric and GPU Energy respectively.

-----  
The registration fee for this seminar prior to November 2<sup>nd</sup> will be \$150 for non-IEEE members, \$100 for IEEE Members, \$75 for GOLD Graduates (last 1-10 years) and \$25 for students with valid ID. The fee will be waived for IEEE Life Member Grades with verification at the seminar. Registrations after November 2<sup>nd</sup> must include an additional late fee of \$25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

If desired, IEEE Continuing Education Units will be offered for this course - a small fee of \$25 will be required for processing. A total of 0.4 CEUs will be offered. Please indicate if desired below.

**Time:** 9:00 AM to 2:00 PM (lunch is included), Friday, November 16, 2007.  
**Place:** PSE&G - Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ 07080-1192  
**Directions:** Route 287 to Exit 5  
If Southbound make right onto Stelton Road; If Northbound make left onto Stelton Road  
Make first left onto Hadley Road  
Pass the two lights and building is on the left; look for PSE&G sign on left  
**Information:** Ronald W. Quade, PE, (732) 205-2614 or rwquade "AT" ieee.org

*Registration: Power Capacitors & Voltage Regulators - Cooper Power Systems 11/16/2007*

Register via US mail to: Ronald W. Quade, PE  
Eaton Electrical  
379 Thornall St, 8<sup>th</sup> Floor  
Edison, NJ 08837

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

IEEE # \_\_\_\_\_ Student @ \_\_\_\_\_ Non IEEE \_\_\_\_\_ Life Member \_\_\_\_\_

Continuing Education Units: \_\_\_\_\_ Yes \$25 \_\_\_\_\_ No  
If CEUs are chosen, please include a \$25 processing fee  
Payment Enclosed \$ \_\_\_\_\_ Add \$25 late registration after November 2, 2007

**Make checks payable to North Jersey Section IEEE (Credit Cards cannot be processed at this time).**

# 2008 Officer Ballot

## Instructions for Casting Ballots

Completed ballots should be mailed to the North Jersey Section Newsletter Editor as follows:

Keith Saracinello  
IEEE North Jersey Section Newsletter Editor  
25 Messenger Ln  
Ringoes, NJ 08551

The ballot **MUST** be filled out completely with members name, membership number, and signature. The ballots are invalid without this information. Xerox copies of the ballot are acceptable as long as they are filled out completely. Ballots received after November 30, 2007, will not be counted.

Chairperson: (choose one)

- ..... Kirit Dixit
- .....(write-in)\_\_\_\_\_

Vice Chairman-1: (choose one)

- ..... Amit Patel
- .....(write-in)\_\_\_\_\_

Vice Chairman-2: (choose one)

- ..... Dr. Sanghoon Shin
- .....(write-in)\_\_\_\_\_

Treasurer: (choose one)

- ..... Pete Donegan
- .....(write-in)\_\_\_\_\_

Secretary: (choose one)

- ..... Russell Pepe
- .....(write-in)\_\_\_\_\_

Members-At-Large: (choose three)

- .....Katherine Duncan
- .....Seth Jakel
- .....(write-in)\_\_\_\_\_

Member Name \_\_\_\_\_ Member No. \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_