

The



# IEEE Newsletter

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

## Unemployed? - Did you know?

### *Unemployed IEEE members are entitled to a 50% dues reduction*

IEEE realizes that economic circumstances may impact some members' ability to pay the full amount of IEEE membership dues. For this reason, the following special circumstance categories have been established. Special circumstances are not available to Student members. Only one category may be claimed in any year.

IEEE offers the following special circumstances categories:

- Minimum Income
- Retired
- Unemployed
- Disabled

**Minimum Income Provision:** Applicants who certify that their prior year's income did not exceed US \$12,900 or equivalent are granted a 50% reduction in IEEE dues, regional assessment and dues for one IEEE Society and its optional publications. Please submit written certification with application and payment. Student members are NOT eligible.

**Retired Provision:** A retired member, not gainfully employed and not qualifying for Life Member Status, on attaining the age of 62 years, may apply for a 50% reduction in dues and assessments. An individual who qualifies for the IEEE Retired Member category may continue any and all Society memberships held for not less than the 5 prior years. Optional publication fees equal those established for Student members.

**Unemployed Provision:** A 50% reduction in membership dues, Society dues, other subscriptions and assessments are available to a member or applicant who informs the IEEE Operations Center Office that he/she: (1) has become involuntarily unemployed and is seeking reemployment, or (2) has become voluntarily unemployed for reasons of raising children. A statement of continued unemployment shall be provided with each annual dues payment. In the case of voluntary unemployment,

the provisions of this Bylaw shall not exceed four years. The reduced payments may not be made in installments.

**Permanently Disabled Provision:** The IEEE membership dues and assessments, if any, shall be waived for those members who become permanently disabled. "Permanent disability" shall mean a medically determinable physical or mental impairment which (i) renders the individual incapable of performing any substantial gainful employment, (ii) can be expected to be of long-continued and indefinite duration or result in death, and (iii) is evidenced by a certification to this effect by a doctor of medicine approved by the Executive Director. The Executive Director shall determine the date on which the permanent disability shall have occurred if such determination is necessary.

## NJIT Course on Microwave Filters and Networks

Taught by Professor Richard V. Snyder (RS Microwave), this course will take the student through microwave filter and network design for lumped and distributed elements, covering passive and active implementations. In order to offer this course in Fall 2009, NJIT requires a minimum enrollment of six students. If you are interested in finding out more about the course content, contact Ralph Giffone (ralph.giffone@gdsatcom.com, 814-360-3733) for a 33-page PDF file containing a course abstract, bibliography and excerpts from the course notes.

## Region 1 Award Nominations

Nominate a colleague. Region 1 of IEEE offers a variety of awards to recognize the engineering accomplishments of members. Specific award categories include: technological innovation, engineering organization, academic teaching, enhancement of IEEE image in the public or industry and sustained IEEE service. To obtain additional information about these categories visit the Region 1 website

[www.ieee.org/r1](http://www.ieee.org/r1)

Once at the site click on Section Information on the far right column. On the Section page click on Region 1 Awards Information. We will assist you. To nominate a qualified individual prepare a 200-word summary (including the individual's name, IEEE number and IEEE US postal mail address) specifying the accomplishment of the candidate.

Send the summary to our Awards Chair Ken Oexle, 11 Deerfield Road, Whippany, NJ 07981, prior to May 1. The North Jersey Awards Committee will review the summary; suggest any changes; complete the nomination form; and forward it to the Region 1 Awards committee with a Section endorsement.

Award nominations are evaluated and approved at the Region 1 Summer Meeting and plaques are presented at the following North Jersey Section Annual Awards Reception.

# May 2009

## Volume 55, Number 10

Publication No: USPS 580-500

"The IEEE Newsletter" (North Jersey Section), is published monthly except June and July by The Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. \$1.00 per member per year (included in annual dues) for each member of the North Jersey Section. Periodicals-class postage paid at New York, NY and at additional mailing offices. Postmaster send address changes to: "The IEEE Newsletter", 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. USPS 580-500 (ISSN 1076-3732).

### NEWSLETTER STAFF

Editor..... Keith Saracinello  
Business Manager ..... Keith Saracinello  
k.saracinello@ieee.org (302) 683-7162

**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@ieee.org](mailto:k.saracinello@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.

### SECTION OFFICERS

Chair ..... Amit Patel  
a.j.patel@ieee.org  
Vice-Chair-1 ..... Dr. Sanghoon Shin  
s.shin@ieee.org (973) 492-1207 Ext. 22  
Vice-Chair-2 ..... Dr. Naresh Chand  
naresh.chand@baesystems.com (973) 636-7408  
Treasurer ..... Pete Donegan  
doneganp@ieee.org  
Secretary ..... Russell Pepe  
rcpepe@ieee.org (201) 960-6796

### Members-at-Large:

Dr. Katherine Duncan ([kduncan@ieee.org](mailto:kduncan@ieee.org))  
Dr. Mengchu Zhou ([zhou@njit.edu](mailto:zhou@njit.edu))

**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, [rcpepe@ieee.org](mailto:rcpepe@ieee.org).**

## NJ Control Systems Society: Convex Programming in Controller Design for Flexible Structures

On May 6, 2009, the IEEE NJ Control Systems Chapter together with the New Jersey Institute of Technology will host a seminar on "Convex Programming in Controller Design for Flexible Structures." The speaker will be Dr. Tarunraj Singh.

### About the Topic

Systems such as the James Webb Space Telescope, the replacement of the Hubble telescope, the Millipede (next generation storage device), cranes, hard disk drives, high-speed tape drives etc., are characterized by vibrations excited by the motion of the structure. These vibrations can negatively influence the performance of the system. This talk will focus on using convex programming technique for the design of controllers which minimize residual vibrations at the end of a maneuver in the presence of uncertainties in the dynamic model of the system. Linear programming and Linear Matrix Inequalities are used to study rest-to-rest maneuvers of lightly damped flexible structures and systems subject to friction.

### About the Speaker

Tarunraj Singh is a Professor with the Department of Mechanical and Aerospace Engineering at the State University of New York at Buffalo. He received his PhD in Mechanical Engineering from the University of Waterloo, Canada, and has been a von Humboldt fellow, a JSPS fellow and a NASA Fellow. His research interests are in the areas of vibration control of maneuvering structures, uncertainty modeling and characterization, target tracking, and nonlinear estimation. He has authored or co-authored more than 150 journal and conference articles. He has recently completed a book entitled "Optimal Reference Shaping for Dynamical Systems: Theory and Applications"..

**Time:** 5:00-6:00 PM, Wednesday, May 6, 2009.

**Place:** New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Directions are available at <http://www.njit.edu/University/Directions.html>.

**Information:** Professor Timothy Chang, (973) 596-3519, [chang@njit.edu](mailto:chang@njit.edu).

## North Jersey Spring 2009 Student Presentation Contest

The Spring 2009 Student Presentation Contest was held this year on March 10, 2009 at Farleigh Dickinson University (FDU) in Teaneck, NJ. This year, presenters joined us from FDU and New Jersey Institute of Technology (NJIT). The Contest is judged separately for Undergraduate and Graduate students, with cash awards of \$100, \$75 and \$50 for first, second and third place, respectively for Undergraduate and Graduate Categories. This contest has been held in years past. Its overwhelming success in generating student participation and interest make it a fantastic event for up-and-coming engineers. The main focus of the presentation contest is to give students an opportunity to sharpen their communication skills, and help prepare for real life situations as practicing engineers and researchers. Additionally, the North Jersey Section Contest provides an excellent chance for students to practice for the Region I Student Paper contest in the spring.

The IEEE North Jersey Section Student Activities Committee would like to thank FDU for hosting the Paper Contest this year. We would especially like to thank Dr. Gloria Reinish of FDU for making all the arrangement necessary to make this event successful.

This year, awards were presented, as follows:

### Undergraduate

- ☞ First Place - Tolulope Malik (FDU)
- ☞ Second Place - Brett Greenberg (FDU) & Dmitriy Kalantarov (FDU)
- ☞ Third Place - Thomas Cauttero (FDU) & Kevin Oseghale (FDU)

### Graduate

- ☞ First Place - Grace Lilly Reddy (FDU)

**IEEE North Jersey Section Education Committee**

- ran courses: C, C++, Java, Advanced Java and C# programming successfully since 1993
- 138 IEEE engineers and non-engineers took these courses and they gave excellent reviews
- We need a company that can provide a conference room, to run the programming courses.
- Contact Donald Hsu, Education Committee Chair, [yanyou@hotmail.com](mailto:yanyou@hotmail.com), if you can help. Thanks!

# IEEE North Jersey Section Activities

## May 2009

**May 1-2** – “The 18<sup>th</sup> Wireless and Optical Communications Conference”, NJ Communications Society, New Jersey Institute of Technology (NJIT), Newark, NJ. Directions are available at <http://www.njit.edu/University/Directions.html>. Dr. Nirwan Ansari (973) 596-3670 ([nirwan.ansari@njit.edu](mailto:nirwan.ansari@njit.edu)).

**May 3** – “NJ Section Awards Reception” - 3:00 to 6:00 PM at the Birchwood Manor, 111 North Jefferson Rd, Whippany, NJ. Anne Giedlinski (973) 377-3175.

**May 6** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, Clifton Public Library - Allwood Branch, 44 Lyall Road, Clifton, NJ, (973) 471-0555. Russell Pepe at [rcpepe@ieee.org](mailto:rcpepe@ieee.org).

**May 6** – “Convex Programming in Controller Design for Flexible Structures” by Dr. Tarunraj Singh, NJ Control Systems Chapter, 5:00-6:00 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Professor Timothy Chang, (973) 596-3519, [chang@njit.edu](mailto:chang@njit.edu).

**May 19** – “USL For Fun and Profit” by Frank Middleton, NJ Computer Chapter, 7:00 PM, Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930. Michael Malm, (201) 355-6167, [mmalm@ieee.org](mailto:mmalm@ieee.org), Seth Jakel (973) 731 1902, (973) 820-1865, [sgjakel@comcast.net](mailto:sgjakel@comcast.net), or Howard Leach (973) 540-1283, [hhleach@ieee.org](mailto:hhleach@ieee.org).

**May 22** – “Superconductor Power Cables Seminar” by Jack McCall, NJ PES/IAS, 9:00 AM to 2:00 PM, PSE&G Training Center, 234 Pierson Ave, Edison NJ. Ronald W. Quade, PE, (732) 205-2614 or [rwquade@ieee.org](mailto:rwquade@ieee.org).

**May 28** – “Recent Developments in US Patent Law” by Kevin M. Curran, Esq., NJ Consultants' Network, Dinner 7:00 PM, Presentation 8:00 PM, Olive Restaurant, Parsippany Hilton, One Hilton Court, Parsippany, NJ 07054, 973-267-7373, [www.parsippany.hilton.com](http://www.parsippany.hilton.com). RSVP by Tuesday, May 26. Contact Robert Walker at [r.d.walker@ieee.org](mailto:r.d.walker@ieee.org) or (973) 728-0344. Specify whether you will be attending the dinner portion of the meeting (recommended). Dinner - \$25 per person, Presentation – Free.

**May 28** – “Control System Overview - New York City Mass Transit System” by Blaise Archis, NJ VTS Chapter, 7:00 PM, Stevens Institute of Technology, Room TBD, Hoboken, NJ. Art Greenberg, (973) 284-5044 or [art.greenberg@ITT.com](mailto:art.greenberg@ITT.com). Check <http://web.njit.edu/~ieeenj/> for meeting updates.

### Upcoming Meetings

**June 3** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at [rcpepe@ieee.org](mailto:rcpepe@ieee.org).

**June 18** – “NBTI in p-MOSFETs: Characterization, Modeling and Material Dependence” by Dr. Souvik Mohapatra, NJ EDS/C&S Chapters, 5:00 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 ([dmsra@njit.edu](mailto:dmsra@njit.edu)).

**Sep. 17** – “Nanowire Biosensors” by Professor Mark A. Reed, NJ EDS/C&S Chapters, 7:00 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), or Dr. Durga Misra (973) 596-5739 ([dmsra@njit.edu](mailto:dmsra@njit.edu)).

## Members and Non-Members Welcome

# PLEASE POST

Reminder: The June Newsletter will be electronic only. If you have a valid email address on record, you will receive a Newsletter web-update notice via email. To update your email address, go to

[http://www.ieee.org/web/membership/join/update\\_profile.html](http://www.ieee.org/web/membership/join/update_profile.html)

As always, that latest meeting updates can be found on the North Jersey webpage

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

*NJ Computer Society:*

## **USL For Fun and Profit**

On Tuesday, May 19th, 2009, the IEEE North Jersey Section Computer Society Chapter will host a presentation entitled "USL For Fun and Profit" by Frank Middleton.

Universal Systems Language (USL) was covered extensively by its creators in the Dec 2008 issue of IEEE Computer Magazine, in the article entitled "Universal Systems Language: Lessons Learned from Apollo". Our guest speaker, Frank Middleton of Apogee Communications Technologies has extensive experience using USL.

### **About the Talk**

From its beginnings at MIT Draper Lab., USL, and its companion Integrated Development Environment, 001, has evolved to be a formidable combination of the best of object and functional programming, and continues to be the way to build error free systems (of systems) in a robust and scalable way.

This presentation will go over some USL basics, and demonstrate the technology in use to build the kind of application for which one might use Ruby on Rails, and show how much simpler it is, not only conceptually, but to build, extend, and maintain systems defined and built with USL/001. The speaker will also showcase his Universal Schema Tool that leverages the power of USL and 001 to make an easy to use XML editor that round trips both XML and RDBMS Schemas from USL Type Maps.

USL is based on a simple mathematical framework that is remarkably easy to understand and use, yet represents, for many people, a whole new paradigm for the entire development cycle. Anyone involved in systems development, from embedded microprocessors to large-scale distributed applications, will find this talk interesting and valuable.

### **About the Speaker**

Frank Middleton is the founder and president of Apogee Communications Technologies, a consultancy that has specialized in the use of USL to provide solutions in the Financial Services Industry and others.

Mr. Middleton's client roster includes companies in wide ranging industries and markets, among them security and surveillance systems, financial services, telecom and communications. He has led technology projects that have both advanced a company's core business and enabled companies to embrace and utilize technology for the purpose of achieving significant cost savings and revenue growth.

Having obtained a BSc in Electronics from the University of Kent at Canterbury,

England, Mr. Middleton went on to acquire a Masters in Computer Science from the Courant Institute of Mathematics at New York University, NYC, Mr. Middleton keeps abreast of a diverse array of technologies through his professional memberships in the IEEE, ACM and AMA.

USL is a favorite topic of Mr. Middleton; you may contact him if you would like him to discuss it with your colleagues, by email ([f.middleton@apogee.com](mailto:f.middleton@apogee.com)) or phone (973 796 2754). You can also get more information at <http://www.apogee.com> and HTI's website (<http://www.htius.com>). USL, 001, and TMap are trademarks of Hamilton Technologies, Inc (HTI)..

### **All Welcome!**

You do not have to be a member of the IEEE to attend. Bring your friends and network during the free pre-meeting buffet starting at 6:00 PM.

**Time:** 7:00 PM, Tuesday, May 19, 2009. Free pre-meeting buffet will begin at 6:00 PM.

**Place:** Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930.

**Information:** Michael Malm, (201) 355-6167, [mmalm@ieee.org](mailto:mmalm@ieee.org), Seth Jakel (973) 731 1902, (973) 820-1865, [sgjakel@comcast.net](mailto:sgjakel@comcast.net), or Howard Leach (973) 540-1283, [hleach@ieee.org](mailto:hleach@ieee.org).

*NJ EDS/C&S:*

## **NBTI in p-MOSFETs: Characterization, Modeling and Material Dependence**

On June 18, 2009, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "NBTI in p-MOSFETs: Characterization, Modeling and Material Dependence." The speaker will be Distinguished Lecturer, Dr. Souvik Mohapatra.

### **About the Talk**

Negative Bias Temperature Instability (NBTI), causing shifts in device parameters such as drain current and threshold voltage, is a serious reliability concern for p-MOSFETs. Though identified more than 40 years ago, NBTI has become the most severe front end reliability issue only recently, as gate oxide thickness is scaled below 2nm, and Nitrogen is incorporated into the gate oxide to prevent Boron penetration and leakage. Besides Si oxynitride/poly-Si devices, NBTI is also a serious concern for high-k/metal gate devices as well.

Like other reliability issues (like HCI), device lifetime under NBTI is determined by accelerated stress tests done at short time, and extrapolating the degradation under operating condition to end of life. It is very important to choose proper stress condition such that defects responsible for NBTI are only accelerated and no new defects are formed. As NBTI degradation recovers (unlike HCI) after stress is turned off for measurement, conventional stress-measure-stress methods give erroneous results, and fast methods must be implemented. It is important to understand and model NBTI physical mechanism, so that proper physics-based models can be developed for reliable determination of device lifetime. It is also important to understand the process / material dependence of NBTI to develop robust, NBTI safe gate insulators that meet other (leakage, mobility) requirements. The talk will address some of these issues.

### **About the Speaker**

Souvik Mahapatra received his PhD in Electrical Engineering from Indian Institute of Technology, Bombay (IITB), India in 1999. From 2000 to 2001 he was at Bell Laboratories, Lucent Technologies, Murray Hill, NJ. From 2002 he is with the Department of Electrical Engineering, IITB, where he is presently a Professor. He is also an Adjunct Professor of ECE Department at Purdue University. His research interests are electrical characterization of defects in dielectric-semiconductor interfaces; hot-carrier and bias temperature instability in CMOS devices; high-k and novel dielectrics for CMOS; and Flash EEPROMs. He has published more than 85 papers in refereed international journals and conferences, was invited to speak at several major international conferences including the IEDM, was a tutorial presenter at IRPS and has worked as a reviewer for many international journals and conferences. Dr. Mahapatra is an IEEE Electron Device Society Distinguished Lecturer.

### **All Welcome!**

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

**Time:** 5:00 PM, Thursday, June 18, 2009. Refreshments will begin at 4:45 PM.

**Place:** New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Directions are available at <http://www.njit.edu/University/Directions.html>.

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

NJ Consultants' Network:

## Recent Developments in U.S. Patent Law

On Thursday, May 28, 2009 the IEEE Consultants' Network of Northern NJ ([www.TechnologyOnTap.org](http://www.TechnologyOnTap.org)) will be holding a dinner meeting at a new location, beginning at a new time.

### About the Topic

Would you like to write your own patent application or just learn more about US patent law?

The presentation will deal with a variety of changes in US patent law that have arisen over the past year or so and the potential consequences thereof. The presentation will begin, however, with a brief introduction to patent law.

Recent developments in patent law revolve around case law that addresses issues including: USPTO changes to patent practice rules; inequitable conduct during patent prosecution; the scope of patentable subject matter; obviousness and standards of patentability; and the availability of permanent injunctions against infringers.

Time will be reserved at the end for questions from the audience, to discuss topics of particular interest.

### About the Speaker

Kevin M. Curran, Esq., received a BA in Integrated Science from Northwestern University; an MA in International Studies from the Loyola University Chicago

Graduate School of Political Science; and a JD from the Loyola University Chicago School of Law.

Kevin is a Patent Attorney registered to practice before the United States Patent & Trademark Office. Having practiced law over eleven years, Kevin has extensive Intellectual Property ("IP") experience in prosecution, litigation, client counseling, transactions, and Sarbanes-Oxley ("SOX") compliance. Among the areas handled in his practice are patents, trademarks, copyrights, and trade secrets. Kevin worked for four years as senior in-house IP counsel at SAP, the world's largest multinational business application software provider. After returning to the US, he launched his own solo legal practice (Curran Patent Law).

Kevin can be reached at [Kevin@CurranPatentLaw.com](mailto:Kevin@CurranPatentLaw.com) or (650) 283-0469.

### About the Consultants' Network

Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes the use of independent technical consultants by business and industry.

### May 2009 Meeting Venue

The CNNNJ is investigating new venues and new approaches for its monthly events. This May, we will meet for dinner, followed by our feature presentation, in the Olive Restaurant at the Parsippany Hilton, located off Route 10 West in Parsippany, NJ. The restaurant is situated in the south side of main atrium.

Although not required, all attendees are strongly encouraged to participate in the pre-meeting networking dinner, to avail themselves of the opportunity to socialize, talk with the speaker and acquaint with members of our organization. Your presence at the dinner will help ensure Network's ability to continue holding future events at the Hilton. Depending on expected number of participants, the restaurant will provide either a dinner buffet for only \$25 per person or menu selections at similar prices.

Since seating is limited and we expect a strong turnout, we advise that you contact us as soon as possible to reserve a seat, even if not participating in the dinner.

### Everyone is Welcome!

**Time:** Dinner - 7:00 to 8:00 PM, Presentation - 8:00 to 9:00 PM, Thursday, May 28, 2009.

**Place:** Olive Restaurant, Parsippany Hilton, One Hilton Court, Parsippany, NJ 07054, (973) 267-7373, [www.parsippany.hilton.com](http://www.parsippany.hilton.com).

**Registration & Information:** RSVP by Tuesday, May 26. Contact Robert Walker at [r.d.walker@ieee.org](mailto:r.d.walker@ieee.org) or (973) 728-0344. Specify whether you will be attending the dinner portion of the meeting (recommended). Dinner - \$25 per person, Presentation - Free.



## JOB DESCRIPTION

**JOB TITLE:** Sales Application Engineer – Shielding Materials 09-12

### SUMMARY

- Plans, directs, and coordinates activities related to customer inquiries and designated projects to ensure that objectives of projects are accomplished within prescribed time frame and funding parameters.
- Acts as liaison between other departments within the company, its manufacturer's representatives, and its customers. Manages project teams through the APQP concept to ensure project progresses on schedule and within prescribed budget.
- Adept at specifying shielding materials and properties to meet customer application requirements. Confers with project personnel to provide technical advice and to resolve problems.
- Manages specific customer requirements throughout project, including selection of special characteristics, setting quality objectives and related training, corrective and preventative actions, order entry, product design and development.

### EDUCATION

Bachelor's degree (B.A.) from four-year College or university; or five years related experience and/or training. Electrical / Mechanical / Material Engineering background preferred. Must be proficient in Excel, MSWord, PowerPoint, and Project Management software.

### Experience

Three years minimum engineering or sales experience directly related to EMI / RFI shielding development and applications.

If interested contact James Freeman at (732) 287-0800 ext 516 or [jfreeman@metexcorp.com](mailto:jfreeman@metexcorp.com).

## Unemployment Rate for U.S. Engineering and Computer Occupations Jumps Significantly in First Quarter

Washington (6 April 2009) - The unemployment rate for U.S. engineering and computer occupations is increasing more rapidly than for professional occupations in general, according to data released Friday by the Department of Labor's Bureau of Labor Statistics (BLS).

"Engineers create jobs, so these data are very discouraging," IEEE-USA President Gordon Day said. "Engineers strengthen companies and start new ones, leveraging the economy upwards. The fundamental need is for capital to support engineering activity. That's why the government's investments in technology and its efforts to restore the banking system are so important."

The unemployment rate for all engineers jumped from 2.9 percent in the fourth quarter of 2008 to 3.9 percent in the first quarter of 2009. For all computer occupations, the rate went from 3.3 percent to 5.4 percent. In comparison, the quarter-to-quarter rate for all professional workers increased from 3 percent to 3.7 percent.

For electrical and electronics engineers the jobless rate rose from 2.4 percent to 4.1 percent, quarter to quarter. For mechanical engineers, it went from 2.1 percent to 4.2 percent. Aerospace engineers suffered less, with an increase from 1.1 percent to 1.4 percent.

In computer occupations, the rate for software engineers went from 1.9 percent to 4.2 percent. For computer scientists and systems analysts the change was from 3 percent to 5.7 percent.

High-tech managers also experienced unemployment increases. For computer and information systems managers, the rate rose from 2.7 percent to 4 percent. For engineering managers it went from 1 percent to 1.8 percent.

"We at IEEE-USA are concerned about how rapidly engineering and computer-related unemployment is trending upwards," Day said. "In 2007 the overall engineering unemployment rate was only 1.2 percent."

IEEE members can find career enhancement resources at <http://www.ieeeusa.org/careers/>. Help for unemployed and at-risk members is available at <http://www.ieeeusa.org/careers/help/>.

IEEE-USA advances the public good and promotes the careers and public policy interests of more than 210,000

engineers, scientists and allied professionals who are U.S. members of IEEE. IEEE-USA is part of IEEE, the world's largest technical professional society with 375,000 members in 160 countries. See <http://www.ieeeusa.org>.

Contact: Chris McManes  
IEEE-USA Public Relations Manager  
Phone: (202) 530 8356  
E-mail: [c.mcmanes@ieee.org](mailto:c.mcmanes@ieee.org)

## North Jersey Section Seeks Committee Chairs and Volunteers

The North Section is seeking new volunteers to help conduct business for the benefit of its membership. There are a variety of volunteer positions open and available. They range from technical to non-technical, leadership or just participatory. For Society 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 North Jersey Section, please contact Dr. Chandra Gupta at [c.gupta@ieee.org](mailto:c.gupta@ieee.org). You are welcome to attend the Section business meeting held the first Wednesday of every month to find out more and other volunteer activities that require some help.

Some committees needing volunteers include the following. Please contact the person indicated for additional information.

- Power Electronics Society Chapter Chair - contact [c.gupta](mailto:c.gupta@ieee.org) below.
- GOLD (Graduates of the Last Decade) Affinity Group Volunteers and Committee members needed - contact [northjerseygold@ieee.org](mailto:northjerseygold@ieee.org)
- WIE (Women in Engineering) Affinity Group Volunteers and Committee members needed - contact [kduncan@ieee.org](mailto:kduncan@ieee.org)
- EMBS (Engineering in Medicine and Biology Society) is seeking a chair and active committee volunteers - contact [c.gupta@ieee.org](mailto:c.gupta@ieee.org).
- Membership Development Committee Chair and Volunteers - contact [c.gupta](mailto:c.gupta@ieee.org) below.

Additionally, if interested volunteers would like to get more general information about the Section, including a complete listing of all chapters and committees, visit the North Jersey Section website <http://web.njit.edu/~ieeenj/>, or contact Dr. Chandra Gupta [c.gupta@ieee.org](mailto:c.gupta@ieee.org).

## Time for Action on New Jersey Mathematics Education

New Jersey is reconsidering its licensure requirements for public school teachers, so now is the time for concerned citizens to register their recommendations. Addresses follow. Currently there are no requirements for prospective elementary school teachers to take any appropriate mathematics courses, and their lack of knowledge of what their pupils should learn is appalling.

IEEE members may want to recommend four courses in accordance with the recommendations of the Combined Board of Mathematical Sciences: one each in arithmetic and number sense; geometry; statistics, probability, and data analysis; and algebraic reasoning. Or you may want to support the recommendations of the New Jersey Association of Mathematics Teacher Education: the first three listed above and a course in mathematical pedagogy.

In either case, write to Dr. Robert Higgins, Director, Office of Licensure and Certification and to the State Board of Education. Both addresses are at the New Jersey Department of Education, Box 500, Trenton, NJ 08625. The email addresses are [Robert.higgins@doe.state.nj.us](mailto:Robert.higgins@doe.state.nj.us) and [StateBD@doe.state.nj.us](mailto:StateBD@doe.state.nj.us).

Currently, New Jersey elementary school teachers are foggy on fractions, division, and subtraction, and not strong on addition. One nice prospective teacher in her last college math class insisted that because in 1999 small trucks owned by Americans averaged 20 mpg and sedans averaged 28 mpg that altogether they must average 48 mpg. "Altogether" means "add." Last year a fifth grade teacher in a nice suburban town was observed drilling her pupils in adding fractions by adding across the numerators and then adding across the denominators. Unprepared teachers resort to teaching key words and incorrect algorithms.

Elementary school teachers are eager to learn, and can learn quickly if taught appropriately. However, they emerged from our highly flawed system, and they need help if New Jersey's children are to learn mathematics. Please help by writing to the above addresses.



## The Eighteenth Wireless and Optical Communications Conference

May 1 – 2, 2009, NJIT, Newark, New Jersey, USA

### Conference Chair

Junyi Li, Qualcomm

### Conference Organizer

Yu-Dong Yao, Stevens

### Program Chairs

#### Wireless Symposium:

Guangying Li, Alcatel-Lucent

Jane Luo, Qualcomm

#### Networks Symposium:

Zhuangbo Tang, Johns Hopkins

Ben Tang, AT&T

#### Optical Symposium:

Angela Chiu, AT&T

Xiang Liu, Alcatel-Lucent

#### Multimedia Symposium:

Zhu Liu, AT&T

Hong Man, Stevens

### Research Posters

Yingying Chen, Stevens

### Tutorials

Hongya Ge, NJIT

### Conference Coordinator

Sigen Ye, Alcatel-Lucent

### Publications

Russell Sun, Alcatel-Lucent

Jin Yu, iBiquity Digital

### Fund Raising

Qi Bi, Alcatel-Lucent

### Treasurer

James Hwang, Lehigh

### Local Arrangement

Mengchu Zhou, NJIT

### Registration

Nirwan Ansari, NJIT

### Public Relations

Kevin Lu, Telcordia

Shuang Yu, Alcatel-Lucent

### International Liaison

Li Fung Chang, Broadcom

### Steering Committee

Qi Bi, Alcatel-Lucent

Li Fung Chang, Broadcom

Ying Hu, Alcatel-Lucent

James Hwang, Lehigh

Kevin Lu, Telcordia

Shuang Yu, Alcatel-Lucent

Mengchu Zhou, NJIT

### Co-Sponsoring Associations

- Chinese American Academic and Professional Society
- Chinese Association of Science and Technology
- Chinese Institute of Engineers
- IEEE Communications Society
- IEEE Northern Jersey Section
- Monte Jade Science and Technology Association
- Photonics Society of Chinese Americans

The eighteenth Annual Wireless and Optical Communications Conference (WOCC) will bring together technical experts and business leaders from the North America and Pacific Rim to discuss multimedia, optical, and wireless communications technologies and business opportunities. The theme of WOCC 2009 is **Converging Broadband Communications** over public mobile wireless networks, public fixed broadband wireline networks, and private customer premises networks. The integration of these three networks is the focus of a new next-generation network providing convergent user-centric services that are no longer associated with the types of network access or content media. Instead, these convergent user-centric services will offer seamless delivery of multimedia applications including voice, data, image, and streaming video independent of any access technologies. The transport layer protocol is converging on Internet Protocol that propelled the growth of the world wide web. The network and service providers will need to deploy standard-compliant converged networks and offer these new value-added services to save operational cost and grow their revenue. Convergent Communications can truly be considered as the enabler for the next phase of growth for the telecommunication industry.

High quality presentations and papers are solicited in the areas of wireless networking, intelligent multimedia, optical communications, and network solutions. The conference consists of four symposiums, with topics including, but not limited to, the following:

#### Wireless Symposium

- Wide-area and fixed wireless communications
- Wireless LAN/PAN
- Convergence of fixed and mobile hybrid communication system
- Low-power mobile end-devices and system-on-chip
- Security in mobile and wireless networks
- Sensor network and distributed mobile computing
- Location-based services and positioning
- Mobile and wireless applications
- Fundamental research in mobile and wireless communications

#### Networks Symposium

- Convergence architectures and solutions
- Migration to NGN and mobile broadband
- Network planning, design methods and tools
- Position of new technologies in the network

#### Optical Symposium

- Optical network planning, designing, and modeling
- Optical access/metro networks
- Photonic switching system architectures and network elements
- Optical passive/active components and devices
- Optical network protection and restoration
- Optical network applications

#### Multimedia Symposium

- Multimedia indexing and search
- Semantic-based multimedia analysis
- Multimedia database
- Multimedia content personalization
- Multimedia content distribution
- Peer-to-peer multimedia
- IPTV technologies and services
- Security of multimedia data
- QoS for multimedia applications

**Submission Deadline: February 1, 2009**

**Notification: March 15, 2009**

Submit the abstract/bio in Microsoft Word to one of the symposium chairs:

- **Wireless:** Guangying Li, [gli@alcatel-lucent.com](mailto:gli@alcatel-lucent.com)
- **Networks:** Zhuangbo Tang, [z.bo.tang@jhuapl.edu](mailto:z.bo.tang@jhuapl.edu)
- **Optical:** Angela Chiu, [chiu@research.att.com](mailto:chiu@research.att.com)
- **Multimedia:** Zhu Liu, [zliu@research.att.com](mailto:zliu@research.att.com)

Please refer to [www.wocc.org](http://www.wocc.org) for the abstract/bio template and additional info.

# NJ Power & Energy Society/Industry Applications Society

## Superconductor Power Cables Seminar

The PES and IAS Chapters will sponsor a technical seminar on the topic of superconductor power cables. The session will be held on Friday, May 22, 2009 at the PSE&G Training Center, 234 Pierson Avenue, Edison, NJ.

### Topics

Superconductor Power Cables – More Power, Less Space, Fault Current Limiting

- ✓ Introduction to superconductivity
- ✓ Quantify the unique capabilities provided superconductor power cables
- ✓ Understand why utilities are installing this capability today
- ✓ Review of current superconductor cable installations and projects
- ✓ Identify the opportunities for superconductor use
- ✓ Appreciate that these systems are composed of commercial, off-the-shelf components

### About the Instructor

Jack McCall is the Director of T&D Systems for American Superconductor with responsibility for superconductor cable systems, STATCOMs, SVCs, and related FACTS solutions. Jack has over 25 years experience in the utility T&D business holding a variety of product engineering, product management, system engineering, business development, marketing, and strategic planning roles. He has his Master's in Electric Power Engineering from Rensselaer Polytechnic Institute, Troy, NY, and his BSEE from Gannon University, Erie, PA. He is a member of the IEEE and CIGRE.

The registration fee for this seminar 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. 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, May 22, 2009.

**Place:** PSE&G Training Center, 234 Pierson Avenue, Edison NJ

**Directions:** [http://maps.google.com/maps?f=q&source=s\\_q&hl=en&geocode=&q=234+pierson+ave,+edison,+nj++08837&sll=37.0625,-95.677068&sspn=32.472848,55.546875&ie=UTF8&ll=40.530714,-74.349353&spn=0.0076,0.013561&z=16&iwloc=addr](http://maps.google.com/maps?f=q&source=s_q&hl=en&geocode=&q=234+pierson+ave,+edison,+nj++08837&sll=37.0625,-95.677068&sspn=32.472848,55.546875&ie=UTF8&ll=40.530714,-74.349353&spn=0.0076,0.013561&z=16&iwloc=addr)

**Information:** Ronald W. Quade, PE, (732) 205-2614 or [rwquade@ieee.org](mailto:rwquade@ieee.org)

*Registration: Superconductor Power Cables Seminar 5/22/2009*

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 \$ \_\_\_\_\_

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