

The



# IEEE Newsletter

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

*NJ Section PACE & GOLD:*

## Engineers Meet: Dysfunction by Design -- the H-1B Program

On Wednesday, May 10, 2006, the North Jersey Section Professional Activities Committee and Graduates of the Last Decade will host a meeting to discuss the H1-B program.

Our guest speaker will be John Miano. His subject will be the H1-B Program – Dysfunction by Design.

### About the Meeting

The title of Mr. Miano's paper is "Dysfunction by Design - The H-1B Program." According to some the H1-B program is a failure since it produces more problems than it solves. The talk will cover restriction on enforcement, requirements to meet the prevailing wage, displacement of U.S. workers, abuses of the H1-B worker, Government activity to rectify the situation.

John will also discuss his recent paper for the Center for Immigration Studies (CIS) on wages for the H1-B worker.

John will have a PowerPoint presentation that will be available on line in the near future. Time will be available for Q & A.

You are encouraged to attend and invite your associates. Special attention should be directed to the IEEE-USA web: [www.ieeeusa.org/policy/care/](http://www.ieeeusa.org/policy/care/).

### About the Speaker

John Miano has 18 years of experience in software development. He has a BA degree in mathematics from the College of Wooster and a JD degree from Seton Hall University.

John has been involved in the High Tech Manpower issue since 1994. His interest in High Tech Manpower began with his experience of employer abuses of programmers and engineers.

In 1998 John started the Programmers Guild (PG). Now a nation wide organization they hold monthly meetings. Their New Jersey PG chapter holds local meetings in the Morris County library on the 2<sup>nd</sup> Tuesday of every month.

John is the author of two books on Computer Programming. He has testified

before Congress at Congressional hearings on the H1-B visa and manpower issue.

### All Welcome

Members and students from all professional societies and engineering disciplines are welcome. We now have attendees from IEEE, ASME, NSPE, ASCE and AEA. For 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)  
<http://web.njit.edu/~ieeenj/>  
[www.asme.org/sections/northjersey](http://www.asme.org/sections/northjersey)

CARE is the Congressional Advocacy Recruitment Effort CARE is a voluntary network of IEEE members who are interested in public policy. To HELP go to [www.ieeeusa.org/policy/care/](http://www.ieeeusa.org/policy/care/)

**Time:** 6:30 to 9:00 PM, Wednesday, May 10, 2006. Refreshments will be served.

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

**Information:** Paul Ward, (973) 790-1625 (PWard1130 "AT" aol.com) or Richard F. Tax, (201) 664-0803 (rftax "AT" verizon.net)

## New Public Announcements - Mailing for North Jersey Section!

A new North Jersey Section non-IEEE members mailing list for public announcements has been created. The purpose of this mailing list is to disseminate to the North New Jersey section information pertinent to their professional and technical enhancement. It also provides information about IEEE membership services, benefits, social events, networking opportunities, technical and professional meetings, and contests. All events are open for the benefit of the membership and potential new membership. Basic mailing list commands for subscribing and unsubscribing to the mailing list are initiated by email:

TO: [listserv@listserv.ieee.org](mailto:listserv@listserv.ieee.org)  
JOIN BODY: subscribe northjerseypublic  
firstname lastname  
LEAVE BODY: signoff northjerseypublic

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/update>

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

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

**MAY 2006**

**May 2006**

**Volume 52, Number 11**

**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 "AT" ieee.org (908) 791-4067

**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, (908) 791-4067*.

**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 ..... Har Dayal  
har.dayal "AT" baesystems.com (973) 633-4618  
Vice-Chair-1..... Bhanu Chivukula  
b.chivukula "AT" computer.org (732) 718-3818  
Vice-Chair-2..... Kirit Dixit  
kdixit "AT" ieee.org (201) 669-7599  
Treasurer ..... Dr. Sanghoon Shin  
s.shin "AT" ieee.org (973) 492-1207 Ext. 22  
Secretary ..... Seth Jakel  
sgjakel "AT" comcast.net (973) 731-1902

**Members-at-Large:**

Pete Donegan (doneganp "AT" ieee.org)  
Amit Patel (a.j.patel "AT" ieee.org)

*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 Seth Jakel at (973) 731 1902, sgjakel "AT" comcast.net.*

*NJ PES/IAS Chapters:*

**Energy Conservation Series - Power Factor Correction**

On May 17, 2006, as part of an ongoing series of free seminars on the topic of energy conservation, the PES and IAS Chapters will sponsor an evening discussion on energy savings associated with power factor correction by Ronald W. Quade, PE.

**About the Meeting**

The seminar will provide the basics of power factor correction:

- What is Power Factor?
- Should I Be Concerned About Low Power Factor?
- What Can I Do to Improve Power Factor?
- How Much Can I Save by Installing Power Capacitors?
- How Can I Select the Right Capacitors for My Specific Application Needs?
- How Much kVAR Do I Need?
- Where Should I Install Capacitors in My Plant Distribution System?
- Can Capacitors Be Used in Non-Linear, Non-Sinusoidal Environments?
- What About Maintenance?

**About the Speaker**

Ron Quade, PE, is an Industrial and Utility Sales Manager for Eaton Electrical, a manufacturer of electrical equipment. He has a BS in Electrical Engineering from Rutgers University and an MS in Power Engineering from New Jersey Institute of Technology. He is also a registered professional engineer in the State of NJ. His prior experience includes Power Quality Engineer with Jersey Central Power and Light and consulting engineering with Burns & Roe Industrial Services Company.

**Time:** 6:30 PM, Wednesday, May 17, 2006. A pre-meeting buffet will be available starting at 6:00PM.

**Place:** Eaton Electrical (Cutler-Hammer), 690 Rahway Ave, Union, NJ. Directions: Route 82 Morris Avenue from either Springfield or Union to Rahway Ave.

**Information:** Ronald W. Quade, PE, (732) 205-2614 or rwquade "AT" ieee.org.

*NJ Consultants' Network:*

**IEEE CNNNJ Visitation Program: The Art of Cold Calling**

On Thursday, May 25, 2006, the IEEE Consultants' Network of Northern NJ is pleased to present "The Art of Cold Calling", by Donald A. Borcharding.

**About the Talk**

Over the last year, the CNNNJ has begun a "Visitation Program" where members of the CNNNJ volunteer to set up appointments and visit various companies during the afternoon of the CNNNJ monthly meetings. The goal is of this program is to meet with decision makers, provide a brochure and an overview of the CNNNJ and, most importantly, open the CNNNJ website "<http://www.TechnologyOnTap.org>" to show how to search for network members and complete a referral form. If the mission is successful, the decision maker is left with a CNNNJ Clock with our website boldly displayed on the front.

This presentation will review the challenges of cold calling and how to overcome the most common obstacles. The presentation will conclude with the visitation results and open the floor for discussion on how to improve the Visitation Program.

**About the Speaker**

Donald A. Borcharding has helped Peter Schutz, our Vice Chairman, with the Visitation Program, setting up appointments, making visitation calls and making cold calls between appointments. He has used this experience to setup his own calls to promote his firm, NexSummit LLC, which specializes in Reducing Product Development Time and Cost.

You can reach Don at [dborcharding "AT" nexsummit.com](mailto:dborcharding) or 908-684-8914.

**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.

**All Welcome!**

Everyone welcome. No registration needed. Free admission.

**Time:** 7:30 PM, Thursday, May 25, 2006.

**Place:** Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building).

**Information:** For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at [www.TechnologyOnTap.org](http://www.TechnologyOnTap.org). To download a map to KDI, go to: <http://www.mcekdi-integrated.com/directions.htm>.

# IEEE North Jersey Section Activities

## May 2006

**May 3** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Seth Jakel at [sgjakel@at.comcast.net](mailto:sgjakel@at.comcast.net).

**May 3** – “Machine Learning for Bioinformatic Data Mining” by Dr. S.Y. Kung, NJ SP Chapter, 4:45PM (pizza at 4:30 PM), New Jersey Institute of Technology (NJIT), Weston Lecture Hall 1, Newark, NJ. Dr. Yun Shi (973) 596-3501 ([shi@at.njit.edu](mailto:shi@at.njit.edu)), Dr. Alfredo Tan (201) 692-2347 ([tan@at.mailbox.fdu.edu](mailto:tan@at.mailbox.fdu.edu)), Dr. Hong Man (201) 216-5038 ([hman@at.stevens-tech.edu](mailto:hman@at.stevens-tech.edu)).

**May 4** – “Device and Process Integration Challenges in Large Area Electronics” by Dr. Arokia Nathan, 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](mailto:dmisra@at.njit.edu)).

**May 4** – “Fort Monmouth Annual Information Technology Forum & Expo 2006 - IPv6 - Enabling Net-Centric Warfare” - AFCEA Fort Monmouth Chapter Professional Development Seminar and the North American IPv6 Task Force, 8:00AM through 4:30 PM, Fort Monmouth Officers Club/Gibbs Hall. Industry - Mike Dazio, [mdazio@at.datatekcorp.com](mailto:mdazio@at.datatekcorp.com), (732) 667-1080 ext.116, Government - Kwai-Fung Chan, [Kwai.Chan@at.us.army.mil](mailto:Kwai.Chan@at.us.army.mil), (732) 532-3592.

**May 7** – “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 10** – “Dielectric-Charging Model of RF MEMS Capacitive Switches” by Dr. James C. M. Hwang, NJ MTT-S/AP-S Chapter, 5:00 PM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Edip Niver (973) 596-3542 (NJIT), Kirit Dixit (201) 669-7599, [kdixit@at.ieee.org](mailto:kdixit@at.ieee.org), or Har Dayal (973) 633-4618, [har.dayal@at.baesystems.com](mailto:har.dayal@at.baesystems.com).

**May 10** – “Biomedical Circuits and Systems Dedicated to Remote Sensing and Neurostimulation” by Dr. Mohamad Sawan, 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](mailto:dmisra@at.njit.edu)).

**May 10** – “Engineers Meet: Dysfunction by Design - the H-1B Program” by John Miano, NJ PACE & GOLD, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625 ([PWard1130@at.aol.com](mailto:PWard1130@at.aol.com)) or Richard F. Tax, (201) 664-6954 ([rtax@at.verizon.net](mailto:rtax@at.verizon.net)).

**May 17** – “Energy Conservation Series - Power Factor Correction” by Ron Quade, PE, NJ IAS/PES Chapters, 6:30 PM, Eaton Electrical (Cutler-Hammer), 690 Rahway Ave, Union, NJ. Ronald W. Quade, PE, (732) 205-2614 or [rwquade@at.ieee.org](mailto:rwquade@at.ieee.org).

**May 19** – “Montclair High School Robotics Teams' Presentation”, 8:00 PM (coffee and desert at 7:30 PM), Union Congregational Church, 176 Cooper Ave, Montclair, NJ. Bob Chamberlin (973) 748-0385, Peter Donegan (973) 783-7998 ([montclairengineer@at.yahoo.com](mailto:montclairengineer@at.yahoo.com)), or go to <http://www.montclairengineers.org/>.

**May 25** – “IEEE CNNNJ Visitation Program: The Art of Cold Calling” by Donald A. Borcharding, NJ Consultants' Network, 7:30 PM, Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or [www.TechnologyOnTap.org](http://www.TechnologyOnTap.org).

**May 26** – “Power Cable Reliability Seminar” by Benjamin T. Lanz, NJ IAS/PES Chapters, 9:00 AM – 2:00 PM, Automatic Switch Company, 50 Hanover Road, Florham Park, NJ. Ronald W. Quade, PE, (732) 205-2614 or [RWQuade@at.ieee.org](mailto:RWQuade@at.ieee.org).

### Upcoming Meetings

**June 7** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Seth Jakel at [sgjakel@at.comcast.net](mailto:sgjakel@at.comcast.net).

**June 15** – “Introduction to 802.16 – WiMAX” – by Steve Crain, NJ VTS Chapter, 7:00 PM (dinner at 6:30 PM), Lucent Technologies, 67 Whippany Rd, Whippany, NJ. Stephen Wilkowski, Lucent Technologies, (973) 386-6487, [swilkowski@at.lucent.com](mailto:swilkowski@at.lucent.com), Arthur Greenberg, (973) 386-6673, [ahg1@at.lucent.com](mailto:ahg1@at.lucent.com).

**June 29** – “RoHS - Implementation and Compliance” by Keith James and Tom Rainone, NJ Consultants' Network, 7:30 PM, Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or [www.TechnologyOnTap.org](http://www.TechnologyOnTap.org).

**Sept. 20** – “Wireless Sensor Networks” by Dr. Martin Haenggi, 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](mailto:dmisra@at.njit.edu)).

**Oct. 17** – “Chip-Package Co-Design of RF Microsystems” by Professor P.R. Mukund, 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](mailto:dmisra@at.njit.edu)).

**Oct. 27** – “National Electrical Code update” by Won Kim, NJ PES/IAS, 9:00AM - 2:00PM, Jersey Central Power & Light Company, 300 Madison Avenue, Morristown, NJ 07962. Ronald W. Quade (732) 205-2614 or [RWQuade@at.ieee.org](mailto:RWQuade@at.ieee.org).

**Nov. 8** – “Theory and Applications of SEM/FIB DualBeam Instrumentation” by Dr. Lucille A. Giannuzzi, 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](mailto:dmisra@at.njit.edu)).

**Dec. 18-21** – “9<sup>th</sup> International Conference on Information Technology (CIT 2006)”, see <http://www.citconference.org> and <http://www.cs.unt.edu/~smohanty/CIT2006>.

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

*NJ EDS/C&S Chapters:*

## **Device and Process Integration Challenges in Large Area Electronics**

On May 4, 2006, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Device and Process Integration Challenges in Large Area Electronics." The speaker will be Dr. Arokia Nathan.

### **About the Talk**

The evolution in materials and process fabrication technologies is posing new challenges and application areas in large area electronics. A driving force in this evolution is silicon thin film technology. Interest in thin film silicon extends well beyond the active matrix liquid crystal display and stems from a variety of desired technological features including low temperature manufacturing with few constraints on the substrate size, material, or topology. More recently, the extension of the technology to plastic substrates has received considerable attention. Interests on plastic is being driven by the need for lightweight, unbreakable, and eventually foldable screens for displays and imagers, along with a plethora of new generation applications ranging from media to bio-medicine.

Although thin film silicon, by virtue of material structure, does not enjoy the same electronic properties, such as speed and current drive capability compared to crystalline Si, it is currently being challenged with new material and device structures that can meet performance requirements, particularly that of active matrix organic light emitting diode (AMOLED) displays and imagers for digital fluoroscopy/mammography. This talk will review precisely these challenges, and address device-and materials-related issues from the standpoint of scaling channel lengths and compacting transistor area through use of vertical transistor structures, and nano-structuring thin film silicon for high mobility, stability, and drive current, and more importantly, CMOS realization for eventual system-on-panel integration at sub-150°C for plastic compatibility.

### **About the Speaker**

Arokia Nathan (SM) is a Professor in Electrical and Computer Engineering, University of Waterloo, and holds the Canada Research Chair in Nanoscale Elastic Circuits. He is also the chief technology officer of Ignis Innovation Inc., Waterloo, Canada, a company he founded to commercialize technology on

thin film silicon backplanes and driving algorithms for active matrix organic light emitting diode displays. Dr. Nathan has extensive experience in device physics and modeling, and materials processing and integration. His present research interests lie in fabrication of devices, circuits, and systems using disordered semiconductors, including organic materials on rigid and mechanically flexible substrates for large area electronics, for imaging and display applications. He received his PhD in Electrical Engineering from the University of Alberta, Edmonton, Alberta, Canada, in 1988. In 1987, he joined LSI Logic Corp., Santa Clara, CA where he worked on advanced multichip packaging techniques and related issues. Subsequently, he was at the Institute of Quantum Electronics, ETH Zürich, Switzerland. In 1989, he joined the Department of Electrical and Computer Engineering, University of Waterloo. In 1995, he was a Visiting Professor at the Physical Electronics Laboratory, ETH Zürich. In 1997 he held the DALSA/NSERC industrial research chair in sensor technology, and was a recipient of the 2001 Natural Sciences and Engineering Research Council E.W.R. Steacie Fellowship. He is currently a Visiting Professor in the Engineering Department, University of Cambridge, UK. He has published extensively in the field of sensor technology and CAD, and thin film transistor electronics, and has over 15 patents filed/awarded. He is a co-author of two books, Microtransducer CAD and CCD Image Sensors in Deep-Ultraviolet, both published by Springer in 1999 and 2005, respectively. He is a Senior Member of the IEEE and a member of the American Physical Society, Electrochemical Society, Materials Research Society, Society for Information Displays, International Society for Optical Engineering, and the Institute of Electrical Engineers (UK). He served as chair of the EDS-SSC society in the IEEE K-W Local Chapter, IEEE Newsletter Editor for Region 7, and received the IEEE/EDS Distinguished Lecturer Award in 2004. He is a member of the IEEE EDS Publications Committee and the IEEE EDS Sub-Committee on Organic and Polymer Devices. He chaired the 2005 IEEE Lasers and Electro-Optics Society Technical Committee on Displays and the Displays Sub-Committee in 2004 and 2005. He is an editorial board member of IEEE Trans. Devices, Materials, and Reliability, and the IEEE/OSA Journal of Display Technology. He served as one of the co-chairs of the Fall 2005 Materials Research Society Symposium M: Flexible and Printed Electronics, Photonics, and Biomaterials, and will co-chair the Fall

2006 Materials Research Society Symposium AA on Mobile Energy. He was a Guest Editor for a two-part Special Issue on Flexible Electronics Technology in IEEE Proceedings.

### **All Welcome!**

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

**Time:** 7:00 PM, Thursday, May 4, 2006. 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).

*NJ EDS/C&S Chapters:*

## **Biomedical Circuits and Systems Dedicated to Remote Sensing and Neurostimulation**

On May 10, 2006, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Biomedical Circuits and Systems Dedicated to Remote Sensing and Neurostimulation." The speaker will be Dr. Mohamad Sawan.

### **About the Talk**

This talk will cover techniques and methods employed to build biomedical circuits and microsystems dedicated to implement advanced implantable and wirelessly controlled smart medical devices (SMDs) such as sensors and microstimulators. A global view of typical micro-devices with a focus on efficient inductive power transfer technique as well as high data rate bidirectional communication will be given. Several types of integrated low-power data modulators/ demodulators will be discussed. In addition, case studies related to peripheral and cortical neural systems will be reported. Selective electrical stimulator to restore bladder functions will be presented, and multichannel intracortical monitor and stimulator will be elaborated. Finally, special attention will be paid to low-power management and corresponding circuit techniques of such typical SMD.

### **About the Speaker**

Mohamad Sawan received his BSc in Electrical Engineering from Université Laval (1984), and his MSc (1986) and "The IEEE Newsletter" – May 2006 - Page 4 NJ

PhD (1990), both in Electrical Engineering, from Université de Sherbrooke. He then completed postdoctoral training at Montréal's McGill University in 1991, and in that same year, joined Ecole Polytechnique de Montréal, where he is currently a Professor of Microelectronics.

Dr. Sawan's scientific interests focus on the design and testing of mixed-signal (analog, digital and RF) circuits and systems; digital and analog signal processing; and the modelling, design, integration, assembly and validation of advanced wirelessly powered and controlled monitoring and measurement techniques. These topics are oriented toward biomedical implantable devices and telecommunications applications. Dr. Sawan is holder of the Canada Research Chair in Smart Medical Devices.

He heads the Microsystems Strategic Alliance of Québec - ReSMiQ and is founder of the Eastern Canada Chapter of the IEEE-Solid State Circuits Society. He also founded the International IEEE-NEWCAS conference, co-founded the International Functional Electrical Stimulation Society, and founded the Polystim neurotechnologies laboratory at Ecole Polytechnique. He is the editor of Springer Mixed-signal Letters, Distinguished Lecturer for the IEEE Circuits and Systems (CAS) Society, Chair of the IEEE Biomedical CAS (BioCAS) Technical Committee, and member of the Biotechnology Council representing the IEEE-CAS Society.

He has published more than 350 papers in peer-reviewed journals and conference proceedings, and has been awarded seven patents. He received the Barbara Turnbull Award for spinal cord research, the Medal of Merit from the Lebanese President (2005), and the J.-A. Bombardier Award from the Association Francophone pour le savoir (ACFAS). Dr. Sawan is a Fellow of the Canadian Academy of Engineering and a Fellow of the IEEE.

#### **All Welcome!**

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

**Time:** 7:00 PM, Wednesday, May 10, 2006. 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).

#### *NJ MTT-S/AP-S Chapter:*

## **Dielectric-Charging Model of RF MEMS Capacitive Switches**

On May 10, 2006, the IEEE NJ Section MTT/S/AP-S will host a talk on "Dielectric-Charging Model of RF MEMS Capacitive Switches." The speaker will be Dr. James C. M. Hwang.

#### **About the Talk**

Commercialization of MEMS devices has been hindered by factors such as packaging and reliability. In particular, the lifetime of electrostatically actuated RF MEMS capacitive switches is currently limited by dielectric-charging effects. To date, dielectric-charging effects in RF MEMS devices have been studied by different research groups with a general charge model proposed. However, there has been no effort to experimentally extract the model parameters or to accurately model the charge in the dielectric and its impact on actuation voltage. Under DARPA's Harsh Environment, Robust Micromechanical Technology (HERMIT) Program and by using a special test structure and setup, we directly measured charging and discharging transient currents in state-of-the-art RF MEMS capacitive switches and constructed a simple charge model. The model can predict charging effects on the operation of the switches under control waveforms of different voltages, duty factors, and frequencies. By comparing with experimental data, it was found that the model correctly predicts that the device lifetime is dependent on voltage and duty factor, but not on frequency. Therefore, for RF MEMS capacitive switches that fail mainly by dielectric charging, the present model can be used to design control waveforms that can either prolong lifetime or accelerate failure. Accelerated life testing is important for MEMS devices because they are relatively slow. The present model can correctly predicts the effects of different acceleration factors thus validating accelerated life testing. This will allow the dielectric and other material and process parameters of RF MEMS capacitive switches be optimized relatively quickly.

#### **About the Speaker**

James C. M. Hwang is a Professor of Electrical Engineering and Director of the Compound Semiconductor Technology Laboratory at Lehigh University. He graduated from National Taiwan University with a BS degree in Physics in 1970, and subsequently earned his MS (1973) and PhD (1976) degrees in Materials Science and Engineering at

Cornell University. After twelve years of industrial experience working at IBM, AT&T, GE, and GAIN, he joined the Lehigh University faculty in 1988. In 2002, Professor Hwang helped establish the \$40 million Center for Optical Technologies at Lehigh University and served as its interim director for six months. He has been a visiting professor at Nanyang Technological University in Singapore and at Shanghai Jiaotong University in China. He has been a consultant for the U.S. Government and many electronic companies in the areas of RF/microwave devices and integrated circuits. Professor Hwang co-founded GAIN and QED; the latter became a public company (IQEP). He has published approximately 200 technical papers and has been granted four U.S. patents. He is a Fellow of the Institute of Electrical and Electronic Engineers.

#### **All Welcome!**

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

**Time:** 7:00 PM, Wednesday, May 10, 2006. Free buffet starts at 6:30 PM.

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

**Information:** Dr. Edip Niver (973) 596-3542 (NJIT), Kirit Dixit (201) 669-7599, kdixit "AT" ieeee.org, or Har Dayal (973) 633-4618, har.dayal "AT" baesystems.com.

## **IEEE-USA President Outlines Training Needed to Succeed in Our Careers**

"Long gone are the days when it was enough just to work hard and become the go-to person for your technical specialty," says IEEE-USA President Ralph W. Wyndrum, Jr. In his March President's column, Dr. Wyndrum posits: "Now, it is crucial for professionals who want to advance their careers to pair their technical skills with 'soft skills' — intelligence on how to communicate with and lead other coworkers." For examples of IEEE/IEEE-USA continuing education offerings that will help engineers succeed in today's global economy, read the entire column on "Making Ourselves More Marketable" at:

<http://boldfish.ieee.org:80/u/2296/82910>

*NJ SP Chapter:*

## **Machine Learning for Bioinformatic Data Mining**

On May 3, 2006, the IEEE North Jersey Section Signal Processing Society along with NJIT will host a seminar on "Machine Learning for Bioinformatic Data Mining." The speaker will be Dr. S.Y. Kung.

### **About the Talk**

Genomic bioinformatics represents a natural convergence of life science and information science. The DNA sequencing and expression profiling represent two main modalities of genomic information sources. The genome is not just a collection of genes working in isolation, but it encompasses global and highly coordinated control of information to carry out a range of cellular functions. Therefore, it is imperative to conduct a genome-wide exploration. Note that genome-wide analysis via pure DNA sequencing is computationally prohibitive. In contrast, expression of several thousands of genes can be measured simultaneously by DNA microarrays, thus permitting discovery of clusters of correlated genes. It is obvious that microarray data analysis will play a vital role in the future genome-wide bioinformatic study.

It is crucial not only to know how to cluster data but also to find appropriate way of looking at the genomic data. In other words, extraction of relevant features is critical for cluster discovery. We shall present a comprehensive set of coherence models to better capture the biological relevant features of genes. In addition, we adopt as the classification architecture several existing neural networks, e.g. SVM or decision-based neural network (DBNN). Our fusion model is built upon the classic mixture-of-experts (MOE) architecture: (1) a local expert is assigned to cover each modality; (2) a gating agent is then adopted to fuse the local scores to reach a Bayesian optimal decision. Based on the standard yeast database, the proposed machine learning/fusion system yields satisfactory performance in predicting several well-studied yeast gene groups e.g. ribosomal and molecular activity genes.

With massive amount of data having to be analyzed, genomic study will become inevitably dependent on advanced machine learning techniques. On the other hand, any computationally based genomic prediction remains untrustworthy until a careful and laborious biological verification is performed. This points to an increasingly symbiotic relationship between the machine learning and genomic technologies.

### **About the Speaker**

Professor S.Y. Kung received his PhD Degree in Electrical Engineering from Stanford University in 1977. He was an Associate Engineer of Amdahl Corporation, Sunnyvale, 1974, and a Professor of Electrical Engineering-Systems of the University of Southern California, (1977-1987). Since 1987, he has been a Professor of Electrical Engineering at the Princeton University. He held a Visiting Professorship at the Stanford University (1984), and a Visiting Professorship at the Delft University of Technology (1984), a Toshiba Chair Professorship at the Waseda University, Japan (1984), an Honorary Professorship at the Central China University of Science and Technology (1994), and a Distinguished Chair Professorship at the Hong Kong Polytechnic University (2001-2003). His research interests include VLSI array processors, system modelling and identification, neural networks, wireless communication, sensor array processing, multimedia signal processing, bioinformatic data mining, and biometric authentication.

Professor Kung is a Fellow of IEEE since 1988. He served as a Member of the Board of Governors of the IEEE Signal Processing Society (1989-1991). He was a founding member of several Technical Committees (TC's) of the IEEE Signal Processing Society, including VLSI Signal Processing TC (1984), Neural Networks for Signal Processing TC (1991) and Multimedia Signal Processing TC (1998), and was appointed as the first Associate Editor in VLSI Area (1984) and later the first Associate Editor in Neural Network (1991) for the IEEE Transactions on Signal Processing. He presently serves on Technical Committees on Multimedia Signal Processing. Since 1990, he has been the Editor-In-Chief of the Journal of VLSI Signal Processing Systems.

Professor Kung has co-authored more than 400 technical publications and numerous textbooks including "VLSI and Modern Signal Processing," with Russian translation, Prentice-Hall (1985), "VLSI Array Processors", with Russian and Chinese translations, Prentice-Hall (1988); "Digital Neural Networks", Prentice-Hall (1993); "Principal Component Neural Networks", John-Wiley (1996); and "Biometric Authentication: A Machine Learning and Neural Network Approach", Prentice-Hall (2005). Professor Kung was a recipient of IEEE Signal Processing Society's Technical Achievement Award for his contributions on "parallel processing and neural network algorithms for signal processing" (1992); a Distinguished Lecturer of IEEE Signal Processing

Society (1994); a recipient of IEEE Signal Processing Society's Best Paper Award for his publication on principal component neural networks (1996); and a recipient of the IEEE Third Millennium Medal (2000).

**Time:** 4:45 PM (refreshments and pizza available at 4:30 PM), Wednesday, May 3, 2006.

**Place:** New Jersey Institute of Technology (NJIT), Weston Lecture Hall 1, Newark, NJ. Directions are available at <http://www.njit.edu/University/Directions.html>.

**Information:** Dr. Yun Shi (973) 596-3501 (shi "AT" njit.edu), Dr. Alfredo Tan (201) 692-2347 (tan "AT" mailbox.fdu.edu), Dr. Hong Man (201) 216-5038 (hman "AT" stevens-tech.edu).

## **IEEE Presidents' Scholarship Match: Meeting the Dollar-for- Dollar Challenge**

For every dollar donated to the IEEE Presidents' Scholarship Fund through 2009, the IEEE Foundation will match it dollar-for-dollar up to \$100,000. Through this matching program, the IEEE Foundation seeks to raise the funds necessary to support the annual awarding of the IEEE Presidents' Scholarship indefinitely. Selected each year from the field of students participating in the Intel International Science and Engineering Fair by a group of IEEE volunteer judges, the IEEE Presidents' Scholarship recognizes outstanding achievement in research and presentation of engineering knowledge in an IEEE field of interest. Since its inception in 1999, seven exceptional students have received this \$10,000 scholarship, which is payable over four years of undergraduate study in engineering or a related field. If you are up to the challenge and wish to help ensure the continuation of the IEEE Presidents' Scholarship and double the value of your gift, click here

<https://dnbweb1.blackbaud.com/OPXREP/HIL/HomePage.asp?cguid=C1E20BB6-87E2-4257-ACD0-3C31153A946E&sid=B06BF861%2D25BC%2D4C5D%2DA2C6%2D11C3E5BC1F38>

Karen Galuchie  
IEEE Development & Grants Officer  
(732) 562 3860  
k.galuchie "AT" ieee.org

NJ VTS Chapter:

## Introduction to 802.16 – WiMAX

On Thursday, June 15, 2006, the Vehicular Technology Society will host a talk on "Introduction to 802.16-WiMAX". The speaker will be Steve Crain.

### About the Talk

The IEEE 802.16 2004 standard specifies air interfaces for Broadband Wireless Access systems and is expected to energize the BWA industry and open many opportunities to deploy systems more cost effectively. WiMAX enables multiple services in a wireless Multiple Access Network such as wireless backhaul, E1/T1 replacements and wireless DSL. The ability to generate, detect, demodulate and troubleshoot physical layer signals is critical to this emerging technology and the overall success of WiMAX applications.

This presentation is of special interest to engineers familiar with single carrier digital modulation who would like a better understanding of the Orthogonal Frequency Division Multiplexing schemes being implemented in 802.11 and 802.16. The presentation will begin with OFDM basics and then provide an overview and comparison of the physical layers for WLAN 802.11 a/g, and WiMAX 802.16d and 802.16e. Equipment will be available to demonstrate measurement solutions for all of these applications

### About the Speaker

Steve Crain is a RF and Microwave Applications Engineer for Agilent Technologies where he specializes in complex waveform generation and analysis. Prior to joining the Agilent team in March of 2000, Steve was a senior development engineer for Raytheon Company, responsible for the integration and test of both missile and communication systems. He earned his BSEE from Northeastern University in 1990.

### All Welcome!

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

### Advance Registration Suggested

Please email [swilkowski@lucent.com](mailto:swilkowski@lucent.com) or [ahg1@lucent.com](mailto:ahg1@lucent.com) with full name (first and last), affiliation, citizenship so that a guest badge is ready.

**Time:** 7:00 PM, Thursday, June 15, 2006. Pre-meeting dinner will start at 6:30 PM.

**Place:** Lucent Technologies, 67 Whippany Rd, Whippany, NJ.

**Information:** Stephen Wilkowski, Lucent Technologies, (973) 386-6487, [swilkowski@lucent.com](mailto:swilkowski@lucent.com), Arthur Greenberg, (973) 386-6673, [ahg1@lucent.com](mailto:ahg1@lucent.com).

## Montclair Society of Engineers: Montclair High School Robotics Team to Demonstrate Robots

The Montclair Society of Engineers is hosting its annual Montclair High School (MHS) Robotics team demonstration on Friday, May 19, 2006.

### About the Demonstration

The MHS Robotic Teams entered two Robots various FIRST (For Inspiration and Recognition of Science and Technology) competitions held throughout the country. The Robots are programmed to go to a goal and shoot a ball into it without any external control. Then they are divided up into teams for an exciting game of BotBall, played under the remote control.

The students will give a presentation followed by a demonstration of the Robots.

### About the Speakers

MHS Robotics is divided into two teams. The students designed, programmed and fabricated the Robots themselves.

The two teams are the six year old coed, Judy and Josh Weston & Montclair Board of Education Team 555 and the new all female Credit Suisse & Montclair Board of Education Team 1929

### About the Montclair Society of Engineers

The Montclair Society of Engineers is an active organization of men and women engaged in all disciplines of the engineering and scientific professions. The society was founded in 1924 to promote friendly associations among engineers, to contribute professional knowledge and experience to the solution of community problems, and to assist students in the study of engineering and allied sciences. It is not affiliated with the IEEE.

### All Welcome!

You do not have to be a member of the Montclair Society of Engineers or the IEEE to attend.

**Time:** 8:00 PM, Friday, May 19, 2006. Coffee and desert served at 7:30PM.

**Place:** Union Congregational Church,, 176 Cooper Ave, Montclair, NJ. Directions are available at <http://www.montclairengineers.org/>.

**Information:** Bob Chamberlin (973) 748-0385, Peter Donegan (973) 783-7998 [montclairengineer@at.yahoo.com](mailto:montclairengineer@at.yahoo.com), <http://www.montclairengineers.org/>.

## Notice to NJ Section Engineers

Paul Ward, a member of the NJ Section IEEE USA and Co-chair of its PACE committee, is looking for (a donation of) electronic test equipment that can be used for teaching electronics and electricity to students with learning disabilities (LD) at the Craig Upper School in Lincoln Park, NJ. This school is a private institution that receives its operating funds from either the parents of the students or some governmental subsidy.

The Craig Upper School is a school dedicated to teaching LD students at the high school level, preparing them to continue on to college or to enter the work force. It teaches a full curriculum, i.e., English, History, Mathematics, Science, and special courses directed at LD students. The staff is limited to approximately fifteen (15) including office, nurse, and guidance with the student population that ranges in the upper fifties (50) which is expected to grow. This ratio of student-to-staff helps to keep class size small and manageable, a class rarely exceeds seven (7).

Paul is trying to accumulate a couple of oscilloscopes, multimeters (analog or digital), oscillators, and function generators, so that a Basic EE course could be put together for a technical course and added to the present academic curriculum. The course would help the student to connect what he or she learned in Mathematics and Science into a practical experience.

The equipment does not have to be in perfect condition, just safe and usable.

If you can donate such equipment, please send it to the following address:

Craig Upper School  
Attn: Paul Ward  
200 Comely Road  
Lincoln Park, NJ 07035

Alternatively, contact Paul Ward at (973) 790-1625 or [PWard1130@aol.com](mailto:PWard1130@aol.com). He will pick it up if needed.



## Spring 2006 Student Presentation Contest Held at NJIT

The North Jersey Section student presentation contest for 2006 was held on Tuesday, March 21<sup>st</sup> at NJIT in Newark, NJ. The contest was well attended and had a good number of participants. There were a total of 8 graduate and undergraduate student presenters covering a wide variety of topics. A group of 4 judges volunteered their time to grade each of the speakers. The purpose of the contest is to help students improve their communication and presentation skills. Each presenter received the judge's comment sheets for constructive feedback.

The contest started with dinner and then moved right into the graduate and undergraduate categories. Many different topics were covered and this years students showed great expertise in using colorful and concise slide presentations. Topics included everything from tutorials on semiconductors and its applications, vehicle display systems, engineering for Iraq reconstruction, standards, and alternative fuels.

The winners, titles, and short abstracts can be found below. Winners in both categories were awarded 1<sup>st</sup>/2<sup>nd</sup>/3<sup>rd</sup> place prizes. The next round of competition will be the regional contest to be held at University of Maine, ME in mid April. All the details of their program can be found off the SAC website [http://ewh.ieee.org/r1/north\\_jersey/sac/ieee.html](http://ewh.ieee.org/r1/north_jersey/sac/ieee.html).

The North Jersey Section Presentation contest will be again held next spring. Greater participation is hoped and the call for presentations will start early in November. All North Jersey graduates/undergraduates are welcome to participate for prizes. Special thanks goes to our judges, Maurice Baker, Russ Pepe, Pete Donegan, and Stephen Wilkowski for taking their valuable time to support local students. Find below pictures of some participants of the presentation contest, judges, and some winners.

*Purushothaman Srinivasan – 1<sup>st</sup> Place Graduate*

*New Jersey Institute of Technology  
“Low-frequency 1/f Noise Performance in MOSFET Devices”*

This talk introduces the low-frequency (1/f) noise for analog applications in semiconductor devices. Also called as flicker noise, this is one of the reliability factors that needs to be considered when Metal-Oxide-Semiconductor Field-Effect-Transistors are to be considered for analog and mixed applications. This is

also used as a reliability and diagnostic tool and performance of various MOSFET devices will be discussed in detail during the presentation. The impact of gate stack technological and processing parameters in high-k based gate stacks on 1/f noise will also be outlined.

*Justin Rodriguez, Timothy Garner – 1<sup>st</sup> Place Undergrad  
Stevens Institute of Technology  
“Applications of Swarm Intelligence in Robotics”*

Swarm intelligence has been an area of much research in recent years due to its promise and widespread implications in the area of robotics. Swarm intelligence can allow multiple inexpensive robots to perform a task more efficiently than a single expensive robot, while also allowing for a more versatile range of functions. It can also allow multiple robots to cooperate in a synchronous manner to perform certain tasks. The foundation of swarm intelligence is the ability of each individual robot in a group to communicate with other robots and assign tasks to maximize the efficiency of the group. Each robot is designated as a single memory cell contributing to the whole. With this collective intelligence, the “swarm” is able to maximize efficiency by having each robot decide on a task by utilizing the information provided. This is possible even if some robots are disabled.

*Fatima Masheeb – 2<sup>nd</sup> Place Undergrad  
Fairleigh Dickinson University  
“Display Technologies for Automobiles”*

In this presentation, the status of automotive devices is evaluated and prospective developments in display technologies for use in automobiles is introduced. The center of attention will be the excess of instrumentation used to display information to the driver. It will show that conventional display technologies can be proficiently used to replace an abundance of secondary instruments and a number of primary functions that will greatly decrease the present clutter on car dashboards. It will also be shown that by replacing existing display technologies, we can shorten the drivers eye movement time and therefore make the driving experience both safer for the driver and also for other drivers and pedestrians. There are a variety of choices in display technologies that could be implemented, including active matrix liquid crystal displays (AMLCDs), electrically controlled birefringent color LCDs, vacuum florescent displays (VFD), LED, LCD light valves and head-up displays (HUDs); Head Up Displays

(HUD) will be focused on, which have the potential to introduce instrumentation which follows driver eye movement. Finally, we address issues relating to the manufacture and integration of displays for automotive instrumentation to include cost, reliability, weight, and footprint by adopting advanced packaging technologies.

*Sowrabh Sharma – 3<sup>rd</sup> Place Undergrad  
Fairleigh Dickinson University  
“Wireless Speedometer using an Optocoupler”*

There are many situations where signals and data need to be transferred from one subsystem to another, within a circuit, or from one piece of equipment to another, without making a direct ohmic connection. Often this is because the source and destination are (or at times may be) at very different voltage levels. The coupling of one circuit with respect to another, with no galvanic or ohmic connections between them, can be achieved by using light as the mode of communication. This process is called optocoupling, and the device used to achieve the process is called an optocoupler. For example a microprocessor which is operating from 5V DC but being used to control a triac which is switching 240V AC needs to be coupled with an optocoupler. To better understand the working of optocouplers and their implementation, I designed a speedometer that uses an optocoupler as its central design feature. This unit can be used to monitor speed of F-1 cars where high precision is a priority. This optocoupler is connected to a wireless transmitter receiver circuit so that the race team can monitor the statistics of the car from a remote location.



*Section volunteers gave their time to help judge the contest*



*Student presenters gathered for a group photo after the contest*





**ADVANCE YOUR CAREER WITH A GRADUATE DEGREE FROM POLYTECHNIC UNIVERSITY.**

**A Sampling of Evening Graduate Programs** (Complete program listing on the web)  
 Bioinformatics | Biomedical Engineering | Chemical Engineering | Computer Science | Computer Engineering  
 Civil Engineering | Electrical Engineering | Financial Engineering | Management | Integrated Digital Media  
 Mechanical Engineering | Systems Engineering | Technical Writing & Journalism | Wireless Innovation

**Executive Master's Degrees** (Fast-track, weekend programs)  
 Management of Technology | Telecomm. & Information Management | Information Systems Engineering

**Online Master's Degrees Available**  
 See list of available degrees and courses offered online at: [epoly.poly.edu](http://epoly.poly.edu)

**JOIN US FOR GRADUATE INFORMATION SESSIONS**

**WESTCHESTER**  
 40 Saw Mill River Road (Route 9A)  
 Hawthorne, NY 10532

**Information Systems Engineering**  
 Tuesday, May 9, 2006 6-7:30 pm

**Management of Technology**  
 Wednesday, May 10, 2006 6-7:30 pm

**MANHATTAN**  
 55 Broad Street  
 New York, NY 10004

**Management of Technology  
 Telecommunications &  
 Information Management**  
 Tuesday, May 9, 2006 6-7:30 pm

**For more information  
 Call: 1-800-POLYTECH  
 Online: [www.poly.edu/graduate](http://www.poly.edu/graduate)  
 mail: [gradinfo@poly.edu](mailto:gradinfo@poly.edu)**



*NJ Consultants' Network:*

**RoHS - Implementation and Compliance**

On Thursday, June 29, 2006, the IEEE Consultants' Network of Northern NJ is pleased to present "Reduction of Hazardous Substances (RoHS) - Implementation and Compliance", by Keith James and Tom Rainone.

**About the Talk**

The IEEE CNNNJ has organized two speakers to share their experiences with the implementation of Reduction of Hazardous Substances (RoHS). Hopefully, you are well into your RoHS initiative and will use this meeting as a final check for your efforts. If not, you will learn what it will take to reach compliance. A small sampling of what you will learn:

1. Where to start?
2. Who to contact?
3. What documentation is required?
4. Should I pursue exemptions?
5. How do I show compliance?
6. What about the China, US and Canada RoHS?
7. What is required to maintain long-term compliance?
8. What is QC 080000 Certification?

**About the Speakers**

*Keith James, Crestron Electronics*

Keith presently works for Crestron Electronics, the world's leading manufacturer of advanced control and automation systems. He is a designer and engineering liaison directing Manufacturing Engineering, Test Engineering, SAP Master Data and Quality Engineering departments for sustaining existing products and leading New Product Introductions. Keith is the RoHS Committee Chairperson leading Crestron's initiatives to comply with Environmental laws and regulations within the global marketplace. He has been an active member with the Society of Manufacturing Engineers and Northern New Jersey Chapter of APICS for over 10 years.

Crestron began their RoHS initiatives 2 years ago by first placing an emphasis on materials management, procurement, and configuration enhancements with their SAP system. The overall RoHS roadmap consisted of capital expenditure, training, and design of experiments. They have more than 750 active products considered RoHS production ready with a combined compliant component total of over 10,000 line items. Crestron has been producing lead-free and RoHS product since April 2005.

*Tom Rainone, Contract Manufacturing*

*Services (CMS)*

Tom has over thirty years experience in corporate management of manufacturing companies. Prior to founding CMS in 2003, Tom owned a mid-sized contract manufacturing company for ten years, which gives him a unique insight into the problems and issues of achieving RoHS compliance. He holds a Bachelors degree in Electrical Engineering, and is a Certified IECQ Implementer for Hazardous Substance Process Management (RoHS Compliance to QC 080000).

CMS is a consulting organization specializing in WEEE Compliance, RoHS Compliance and RoHS Process Management Solutions for QC 080000 Certification.

**All Welcome!**

Everyone welcome. No registration needed. Free admission.

**Time:** 7:30 PM, Thurs., June 29, 2006.

**Place:** Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building).

**Information:** For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at [www.TechnologyOnTap.org](http://www.TechnologyOnTap.org). To download a map to KDI, go to: <http://www.mcekdi-integrated.com/directions.htm>.



# AFCEA Newsletter

## FORT MONMOUTH CHAPTER



### Fort Monmouth Annual Information Technology Forum & Expo 2006

### IPv6 - Enabling Net-Centric Warfare

Sponsored By AFCEA Fort Monmouth Chapter Professional Development Seminar and the North American IPv6 Task Force ([www.nav6tf.org](http://www.nav6tf.org))

Keynote Speaker: Mr. Terry Edwards, SES, Director,  
Army Enterprise Architecture, Army CIO/G-6

Thursday, May 4, 2006

Fort Monmouth Officers Club/Gibbs Hall

Seminar, Conference and Exhibits: 0800-1630

Conference Registration Fee: \$50\*

\*Registration Fee includes seminar and keynote luncheon. The expo is free to attend.  
Conference times and speakers are subject to change.

### Theme: IPv6

The U.S. Department of Defense (DoD) issued a policy mandate on 9 June 2003, for all DoD components to migrate to Internet Protocol version 6 (IPv6) by FY08. The purpose for this mandate is to take advantage of additional features and capabilities of the next-generation IPv6 to support the DoD transformation to the Net-Centric Operations and Warfare (NCOW) concept.

In addition to providing the same services as the current-generation IPv4 in Warfighter networks, IPv6 provides a flexible framework to support the integration of new Net-Centric Operations functionality that will be required in the near future. IPv6 will provide for easier management and better mobility, as well as a very large pool of addresses eliminating Network Address Translators (NATs) that break the end-to-end nature of the original IP network.

### Seminar Objectives:

Transitioning to IPv6 is a pervasive challenge for all Federal Agencies that will result in significant benefits. The DoD has issued an IPv6 transition mandate that all GIG assets be IPv6 capable by fiscal 2008. The General Accounting Office (GAO) recommends that the U.S. begin to address key planning considerations for the IPv6 transition. The Office of Management and Budget (OMB) has issued an IPv6 transition mandate that all Federal Agencies transition their network infrastructure backbones by fiscal 2008. What do these mandates mean to your organization and programs? Where can you find more information about the IPv6 transition? What are the issues and risks associated with the IPv6 transition? What are the available transition mechanisms? What are the lessons learned from pilot program implementations and other experiments?

The goal of this **AFCEA Technology Forum** is to address these issues, share lessons learned, and present exhibits from vendors that are developing IPv6 products and solutions. You will meet experts who will share their experiences and lessons learned on the following:

- IPv6 transition impacts on the DoD Acquisition Life-Cycle (Mr. Terry Edwards, Army CIO /G-6)
- IPv6 tutorial and operational benefits (Yurie Rich, Native6)
- Presentations from various programs such as LandWarNet (WIN-T), FCS, PdM CHS, PEO-EIS
- IPv6 Transition Technologies and On-Going R&D and testing efforts (Dave Green, CERDEC S&TCD and Ed Jankiewicz, Datatek Applications)
- Legacy software migration challenges and lessons learned (Ed Kierman, SED)



For Government attendees, attendance at this event can earn Continuous Learning (CL) Points.

For Registration, Agenda and Exhibitor information go to:

[www.FortMonmouthITC.com](http://www.FortMonmouthITC.com)

For further information contact:

Industry – Mike Dazio 732 667 1080 ext116  
[mdazio@datatekcorp.com](mailto:mdazio@datatekcorp.com)

Government -- Kwai-Fung Chan 732 532-3592  
[Kwai.Chan@us.army.mil](mailto:Kwai.Chan@us.army.mil)



# NJ Power Engineering Society/Industry Applications Society

## Power Cable Reliability Seminar

The PES and IAS Chapters will sponsor a technical seminar on the topic of power cable reliability. The session will be held on Friday, May 26, 2006, at Automatic Switch Co., 50 Hanover Rd, in Florham Park, NJ.

### Topics

#### Shielded Power Cable Reliability:

- ✓ A Historical Perspective
- ✓ Power Cable Failure Mechanisms
- ✓ International Standards Update
- ✓ Review of Available Test Methods
- ✓ Choosing the Right Test
- ✓ Implementing a Successful Cable Reliability Program
- ✓ Case Studies: Medium Voltage to Extra High Voltage

### About the Instructor

The instructor will be Benjamin T. Lanz from IMCORP. Ben received a Bachelor of Science degree in Electrical Engineering from the University of Connecticut in 1999. Since 1997 he has worked for IMCORP in Storrs, Connecticut ([www.imcorp.tech.com](http://www.imcorp.tech.com)) and now holds the position of Senior Application Engineer. He supported the development of the IMCORP Cable Diagnostic Technology and has extensive cable reliability program consulting and field testing experience in North America and Europe. He is an active Member of the IEEE Power Engineering Society and a voting member of the IEEE Standards Society. He serves as the Vice Chairman of the Insulated Conductors Committee (ICC) Workgroup C16W, which is responsible for the IEEE 400 "Guide for Field Testing and Evaluation of the Insulation of Shielded Power Cable Systems" and is the Vice Chairman of the ICC MV Underground Cable Reliability Discussion Group. He has published a number of papers on cable reliability and cable diagnostics in the context of field application and regularly presents on the topic.

---

The registration fee for this seminar prior to May 12<sup>th</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 May 12<sup>th</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 \$15 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 26, 2006.  
**Place:** Automatic Switch Company, 50 Hanover Road, Florham Park, NJ 07932 (973-966-2000)  
**Directions:** From Route 80 Take I-287 to Exit 37 (NJ 24 East - Springfield). Take NJ 24 East to Exit 2B (Columbia Turnpike). Proceed 2.2 miles to Hanover Road (6th set of traffic lights). Turn left on Hanover Road (AAA Building). Automatic Switch will be on the right (0.4 mile). Enter first driveway-marked shipping/receiving and proceed to visitor parking lot on the left. Follow sidewalk to office entrance door.  
**Information:** Ronald W. Quade, PE, (732) 205-2614 or [rwquade@at.ieee.org](mailto:rwquade@at.ieee.org)

---

### Registration: Power Cable Reliability Seminar 5/26/2006

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 \$15 \_\_\_\_\_ No

If CEUs are chosen, please include a \$15 processing fee

Payment Enclosed \$ \_\_\_\_\_ Add \$25 late registration after May 12, 2006

**Make checks payable to North Jersey Section IEEE**

# Call For Papers

## 9<sup>th</sup> International Conference on Information Technology (CIT 2006) Bhubaneswar, India, December 18-21, 2006

<http://www.citconference.org>  
<http://www.cs.unt.edu/~smohanty/CIT2006/>



CIT (Conference on Information Technology) is a premier international forum for high quality research in the areas of Information Technology. CIT2006 is being jointly organized by the Orissa Information Technology Society (<http://www.oits.org>) and the Institute of Technical Education and Research, Bhubaneswar, India (<http://www.iterindia.com>). Researchers, developers, and practitioners from academia and industry are invited to present their research findings on various topics of IT and its Applications. Four types of submissions are solicited: regular papers, short papers, poster papers and tutorials.

**Conference Tracks:** CIT encourages submissions in all the areas of information technology. However, the papers in the following 6 tracks will be primary focus of this year conference (CIT2006). The submissions in each track could be on any of the topics listed, but are not limited to them.

- **Bioinformatics and Computational Biology:** Novel applications in Bioinformatics, Data Mining and Statistical Modeling of biological data, Visualization of Biological Processes and Data, Management, Migration and Integration of Biological Databases, Biological Database search/indexing.
- **Communication Networks and Protocols:** Broadband Multimedia Communications, Wireless Ad hoc/Sensor Networks, Network Security, Wireless and Mobile Communications, Emerging IT Networks.
- **Language Processing:** Character recognition, text to speech conversion, speech synthesis, Signal and Image Processing.
- **Security, Content Protection, and Digital Rights Management:** Watermarking, Steganography, Cryptography, Biometrics, Digital Libraries.
- **Databases, Information Warehousing and Data Mining:** Intelligent Databases, Query and Constraint-based Data Mining, Mining Spatial and Temporal Data, Mining of Data Streams, Feature Extraction, Collaborative filtering/personalization, Cost-based Decision making, Visual Data Mining, Privacy Sensitive Data Mining.
- **Application Specific Software and Hardware Systems:** Embedded Information Systems, Hardware/Software/Firmware issues, Nano-technology and Applications, Quantum Information Processing.

**Paper Submission:** Online submissions of original and unpublished papers are encouraged. Three types of papers of papers will be considered: regular papers (6-pages), short papers (4-pages), poster papers (2-pages). Regular papers will be published in Lecture Notes in Computer Science (by Springer-Verlag). Short/poster papers and 1-page tutorial-abstracts will be printed by Tata-McGraw-Hill (TMH). All submitted papers will undergo DOUBLE-BLIND-REVIEW by a strong team of reviewers and program committee members consisting of leading researchers around the globe. Authors of papers need to prevent identity disclosure in many ways: (1) not list names and affiliations of authors, (2) not say "my work" or "our work" in the text while citing self references, and (3) not write acknowledgments such a way that identity of authors are implied. Author information should ONLY be included in the submission form.

**Best Paper Awards:** Three awards will be conferred with due recommendations from the program committee from the papers presented in the conference. Each award will carry cash prize and citations. Amiya K. Pujari Award is provided for the Best Paper of the conference. Narayan Misra Award is given to the best paper from Orissa. One student best paper award will be awarded from the papers with students as the leading authors.

**Fellowships:** The Steering Committee will award limited number of fellowships to students based on need and merit, to partially cover expenses of attendees from India. Applications must be submitted before the fellowship application deadline using the conference website.

### Important Deadlines

- Papers/tutorials submission: June 15, 2006
- Notifications of review status: August 15, 2006
- Camera ready papers or tutorial-abstracts: September 15, 2006