

The



# IEEE Newsletter

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

*NJ Computer Chapter:*

## Model-based Development of Embedded Software

On Tuesday, August 2<sup>nd</sup>, 2005, the IEEE North Jersey Section Computer Chapter will host a presentation titled "Model-based Development of Embedded Software" by Dr. Insup Lee.

### About the Talk

An embedded system typically consists of a collection of components that interact with each other and with their environment through sensors and actuators. Examples of embedded systems include manufacturing controllers, automotive controllers, avionics systems, medical devices, and robots. There are many factors, which complicate the design and implementation of embedded systems, due to ever increasing complexity, capability, and sophistication in their operating platforms and application requirements.

We have been developing CHARON ([www.cis.upenn.edu/mobies/charon/](http://www.cis.upenn.edu/mobies/charon/)) and its toolset to facilitate the development of embedded systems. CHARON is a hybrid system modeling language that is specifically designed to support modular and hierarchical specifications with compositional semantics. Hybrid systems are finite state machines with continuous dynamics, and are a natural formalism for modeling many types of embedded systems. Based on CHARON, we are developing techniques and tools for hierarchical and distributed simulation, reachability analysis, automatic code generation, automatic test generation, and run-time monitoring and checking. In this talk, the following will be presented: an overview of CHARON, correctness of simulation, code generation, and two case studies: AIBO by SONY and infusion pump.

### About the Speaker

Insup Lee received a BS degree in mathematics from the University of North Carolina, Chapel Hill, in 1977, and PhD degree in computer science from the University of Wisconsin, Madison, in 1983. He is currently Professor in the

Department of Computer and Information Science at the University of Pennsylvania, where he has been since 1983. He was CSE Undergraduate Curriculum Chair from September 1994 to August 1997.

His research interests include embedded systems, real-time computing, formal methods and tools, medical device systems, wireless sensor network, and software engineering. He has developed programming concepts, language constructs, and operating systems for real-time systems. In recent years, he has developed specification, analysis, and testing techniques based on real-time process algebra (ACSR). In addition, he has developed a hierarchical specification language for hybrid systems (CHARON). Based on CHARON, he has been developing techniques for automatic code generation and test generation. He also has been developing the run-time monitoring and checking framework (MaC) that can be used to assure the correctness of a running system through monitoring and checking of safety and QoS properties; the prototype MaC system has been implemented in Java and C. Lately, he has been developing programming abstraction and security techniques for sensor networks, as well as applying high-assurance techniques to medical devices software systems.

He was Chair of IEEE Technical Committee on Real-Time Systems for 2003-2004. He has served on numerous program committees, and also (co-) chaired several conferences and workshops, including IEEE Real-Time Systems Symposium in 1992 and 1993, International Workshop on Real-Time Computing Systems and Applications in

1994 and 1996, CONCUR '95 (International Conference on Concurrency Theory) in 1995, IEEE International Symposium on Object-oriented Real-time distributed Computing (ISORC) in 1998 and 2000, and EMSOFT in 2003. He has been on the editorial boards of IEEE Transactions on Computers (1995-2000), Formal Methods in System Design, Journal of Electrical Engineering and Information Science, and Real-Time Systems Journal. He has been an IEEE CS DVP (Distinguished Visitors Program) speaker since 2004, and is Co-Chair of IEEE CS Technical Steering Committee on Embedded Systems. Dr. Lee is an IEEE fellow.

### 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, August 2, 2005 (pre-meeting buffet starting at 6:00 PM).

**Place:** Lucent Technologies, 67 Whippany Road, Room 3C-222, Whippany, NJ.

**Information:** Seth Jakel (973) 731-1902 or (908) 243-8715 or (973) 820-1865 (sgjakel "AT" comcast.net), Howard Leach (973) 540-1283 (hhleach "AT" aol.com), Vivek Shaiva (908) 229-6125 (vshaiva "AT" computer.org), or Arthur Greenburg (973) 386-6673 (ahg1 "AT" lucent.com). **Registration in advance is recommended** with full name, affiliation and nationality so that an admission badge will be available for you on arrival.

**AUGUST 2005**

# August 2005

## Volume 52, Number 2

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

Chairman ..... Har Dayal  
har.dayal "AT" baesystems.com (973) 633-4618  
Vice-Chairman-1..... Bhanu Chivukula  
b.chivukula "AT" computer.org (732) 718-3818  
Vice-Chairman-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 ..... Russell Pepe  
rpepe "AT" att.net (201) 960-6796

### Members-at-Large:

Dr. Nirwan Ansari (nirwan.ansari "AT" njit.edu)  
Gary Hojell (gary.hojell "AT" itt.com)  
Dr. Richard Snyder (r.snyder "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 Russell Pepe at (201) 960-6796, rpepe "AT" att.net.**

## NJ EDS/C&S & MTT-S/AP-S Ch: Quantum Engineering of Nanoelectronic Devices

On September 21, 2005, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with MTT/S/AP-S and the New Jersey Institute of Technology will host a talk on "Quantum Engineering of Nanoelectronic Devices." The speaker will be Professor Vijay K. Arora.

### About the Talk

Quantum (digital-type) concepts are gaining prominence over and above classical (analog-type) ones in miniaturized devices where nanometer size can be less than or equal to the de Broglie wavelength of an electron in any of the three Cartesian directions. An electric field driving electrons in these devices can be extremely high. This converts random carrier motion to a streamlined one, thereby limiting the velocity to thermal velocity or Fermi velocity depending on the degeneracy of the sample. This re-organization of the carrier velocities makes familiar Ohm's law invalid, thereby enhancing the role of high-field velocity saturation in performance evaluation and characterization of nanostructures. Further, a free flight of a carrier may be interrupted by an emission of a quantum of energy in the form of a phonon or photon. This emission further limits the saturation velocity and also degrades the diffusion coefficient. The seminar will demonstrate that a higher mobility does not necessarily lead to a higher saturation velocity showing independence of the saturation velocity on mobility-limiting scattering mechanisms. A review of quantum-mechanical and high-field effects that have impact on the design of optoelectronic devices and other nanocircuits is presented.

### About the Speaker

Vijay K. Arora, a tenured Professor of Electrical Engineering and Engineering Management at Wilkes University, held distinguished visiting appointments at the University of Illinois (1981-82), the University of Tokyo (1989-90), National University of Singapore (1991-93), Nanyang Technological University (1999-2000), and the University of Western Australia (2000-2001). In addition to his long-term visiting appointments, Professor Arora visits several international institutions on short-term consulting assignments and enjoys the privilege of knowing the cultures and educational methods being practiced around the globe. In recognition of his research, he was invited to give

presentations at several international scientific gatherings. His research interests include mobility limiting mechanisms in high-speed devices, including quantum and high-field effects. Professor Arora has authored or co-authored over 150 papers on scientific and educational issues. As past chair of the International Division of American Society for Engineering Education (ASEE), he organized several international events. As chair of the 1996 ASEE Mid-Atlantic Conference, he edited and published the proceedings entitled *Re-Engineering Education and Training for a Competitive Global Economy*. Professor Arora is on the Distinguished Lecturer Program of the IEEE Electron Devices Society and APS Forum on Industrial and Applied Physics and is listed in several biographies. He was recently named Leading Educator of the World 2005.

### All Welcome!

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

**Time:** 7:00 PM, Wednesday, September 21, 2005. 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), Har Dayal (973) 633-4618 (har.dayal "AT" baesystems.com), or Kirit Dixit (201) 669-7599 (kdixit "AT" ieee.org).

## Conference Rooms Needed!

The North Jersey Section (Education Committee) is looking for conference room facilities to hold their training seminars. The seminars are being held on one weeknight from 6:30 PM to 9:00 PM. In return for providing the conference facility for free, the organization can get free registration up to three members in the course/seminar. Please contact Bhanu Chivukula, Education Committee Chairman, at b.chivukula "AT" computer.org for suggestions or discussions, if interested.

# IEEE North Jersey Section Activities

## August 2005

**Aug. 2** – “Model-based Development of Embedded Software!” - NJ Computer Chapter, 7:00 PM (pre-meeting buffet at 6:00 PM), Lucent Technologies, 67 Whippany Road, Room 3C-222, Whippany, NJ. Seth Jakel (973) 731-1902 or (908) 243-8715 or (973) 820-1865 (sgjakel “AT” comcast.net), Howard Leach (973) 540-1283 (hhleach “AT” aol.com), Vivek Shaiva (908) 229-6125 (vshaiva “AT” computer.org), or Arthur Greenburg (973) 386-6673 (ahg1 “AT” lucent.com).

**Aug. 3** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe “AT” worldnet.att.net.

### Upcoming Meetings

**Sept. 7** – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe “AT” worldnet.att.net.

**Sept. 21** – “Quantum Engineering of Nanoelectronic Device” – EDS/C&S, & MTT-S/AP-S Chapters, 7:00 PM (buffet at 6:15 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Edip Niver (973) 596-3542 (NJIT), Har Dayal (973) 633-4618 (har.dayal “AT” baesystems.com), or Kirit Dixit (201) 669-7599 (kdixit “AT” ieee.org).

**Sept. 29** – “Experiences in Accounting” - 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. ?** – “Field Programmable Gate Array Seminar” - NJ Section, Time, Date and Location TBA. See <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.

**Sept. ?** – “Oracle Database Concepts Including SQL for Programmers” - NJ Section, Time, Date and Location TBA. See <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.

**Oct. 6** – “2005 MTT/AP Symposium and Mini-Show” – MTT-S/AP-S Chapter, 9:30 AM - 5:30 PM, Prime Hotel & Suites (formerly Radisson Hotel Fairfield), 690 Route 46 East, Fairfield, NJ. Kirit Dixit (201) 669-7599 (kdixit “AT” ieee.org), Art Greenberg (973) 386-6673 (ahg1 “AT” lucent.com), Har Dayal (973) 633-4618 (har.dayal “AT” baesystems.com), or George Kannell (973) 386-4170 (gkk “AT” lucent.com).

**Oct. 11-Nov. 29** – “Project Management” – North Jersey Section, North Jersey Section, Tuesday Evenings, 8 sessions, 6:30-9:00 PM, NJ International Bulk Mail Center, 80 County Rd, Jersey City, NJ. Bhanu Chivukula (b.chivukula “AT” computer.org).

**Oct. 20**– “Life Grade Luncheon” - 11:30 AM, Hamilton Park Conference Center, 175 Park Ave, Florham Park, NJ 07932. Ken Oexle (973) 386-1156.

**Oct. 28** – “Advanced Concepts in Transformer Protection Technical Seminar” - NJ IAS/PES Chapters, 9:00 AM – 1:00 PM, PSE&G Training Center, 234 Pierson Ave, Edison NJ. Ronald Quade, PE, (732) 205-2614 or rwquade “AT” ieee.org.

**Nov. 18** – “Upgrade of Generator Protection to Comply With IEEE Guides Technical Seminar” - NJ IAS/PES Chapters, 9:00 AM – 1:00 PM, PSE&G Training Center, 234 Pierson Ave, Edison NJ. Ronald Quade, PE, (732) 205-2614 or rwquade “AT” ieee.org.

**Members and Non-Members Welcome**

**PLEASE POST**

## Experiences in Accounting Panel

On September 29, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a discussion on "Experiences in Accounting". A panel of experienced independent consultants will lead the discussion.

### About the Talk

Independent consultants face special problems when it comes to accounting, especially regarding taxes and insurance. Members of CNNNJ will pool their collective experience and knowledge and share it with the attendees for what promises to be an entertaining panel session.

Accounting and insurance issues will be discussed as they relate to self-employed consultants, especially IRS rules about 1099 vs. W2, (section 530 vs. 1706), when to make estimated payments, social security and Medicare, the difference between subchapter S and C, LLCs, and other options, section 179 deduction rules, depreciation, home office deductions, state specific issues, and insights into what if any liability insurance or any compulsory insurance independent consultants should have.

### About the Speakers

Biographies of CNNNJ members, some of whom have more than 20 years of experience as independent consultants, may be found on our website at <http://www.technologyontap.org>, where you can also sign up for our newsletter and find information about joining CNNNJ. All attendees on the 29th are invited to participate and share their business knowledge and related anecdotes with their peers.

### All Welcome!

Everyone welcome. No registration needed. Free admission.

### 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.

**Time:** 7:30 PM, Thursday, September 29, 2005.

**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>.

## 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 "AT" aol.com. He will pick it up if needed.

## North Jersey Section Seeks Committee Chairs and Volunteers

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

If you would like to become involved with volunteering in some of these efforts or positions or just become more informed about what is happening at the NNJ IEEE Section, please contact the persons listed below for additional information and questions. You can even attend the section business meeting held the first Wednesday of every month to find out more and other volunteer activities that require some help.

Some of the positions currently open and available are:

- *LEOS Chapter Chair.* Contact Har Dayal (har.dayal "AT" baesystems.com)
- *Controls Chapter Chair.* Contact Howard Leach (Hhleach "AT" aol.com)
- *GOLD Affinity Group Chair.* Contact Dick Tax (rtax "AT" bellatlantic.net)
- *Historian Committee* seeks help collecting IEEE historical information and specifically IEEE North Jersey Section History. Contact Al Stolpen (a.stolpen "AT" ieee.org)
- *Student Activities Committee* seeks new volunteers for North Jersey. Contact Amit Patel (a.j.patel "AT" ieee.org)

Additionally, if interested volunteers would like to get more general information about other activities in our section, visit the North Jersey Section website for newsletter information <http://web.njit.edu/~ieeenj/> or contact Har Dayal, har.dayal "AT" baesystems.com.

## Five U.S. Technical Job Classifications Show Employment Drop, One Shows Steep Increase

Washington (15 June 2005) - Five major engineering and computer job classifications showed a drop in employment in the first quarter of 2005 vs. the 2004 average, while one showed a large increase, according to data compiled by the U.S. Department of Labor's Bureau of Labor Statistics (BLS).

The biggest drop was among computer hardware engineers (18,000), followed by computer software engineers (13,000), computer programmers (8,000), electrical and electronics engineers (8,000) and computer and information systems managers (5,000). Contrasted with this loss of 52,000 jobs, the BLS reported a gain of 54,000 jobs among computer scientists and systems analysts.

"While we are encouraged by the employment growth among computer scientists and systems analysts, the continuing shrinkage of other technical specialties signals that all is not well in electrotechnology professions," IEEE-USA President Gerard A. Alphonse said.

Percentage-wise, the computer hardware engineers workforce declined by 18.8%, while computer scientists and systems analysts experienced 7.7% growth. The other four job classifications fell modestly, and the overall increase in technical employment was less than 1% (0.1).

This table summarizes the BLS data:

Job Classification	2004Avg	1Q2005	Change	Pct.
Computer Hardware Engineers	96,000	78,000	-18,000	-18.8
Computer & Info. Systems Managers	337,000	332,000	-5,000	-1.5
Computer Programmers	564,000	556,000	-8,000	-1.4
Computer Scientists & Systems Analysts	700,000	754,000	54,000	7.7
Computer Software Eng.	813,000	800,000	-13,000	-1.6
Electrical & Electronics Engineers	343,000	335,000	-8,000	-2.3
Total	2,853,000	2,855,000	2,000	0.1

## IEEE-USA Launches Employment Navigator to Enhance Members' Career Vitality

Washington (1 July 2005) - The IEEE-USA Employment Navigator allows IEEE members to connect quickly with hiring employers, build and send effective resumes and link to salary benchmarking and other career resources.

Employment Navigator collects 5 million job leads from 160,000 Web sites and places them in a single searchable database. The information comes from corporate Web sites, job boards, government and newspaper sites, and niche job sites (geography, industry and occupation specific). With this tool, IEEE-member subscribers get access to unpublished job opportunities that never leave an employer's website (an estimated 30% of jobs in the database).

The portal also provides tools for resume creation and distribution, and links to other IEEE resources like the IEEE Job Site (<http://careers.ieee.org/>) and the IEEE-USA Salary Service (<http://www.ieeeusa.org/careers/salary/>).

In a recent survey of Employment Navigator users, more than two-thirds rated the tool valuable or very valuable; 75% log in daily or weekly to search for jobs; and two-thirds reported finding leads not found on any job board.

A six-month subscription is just \$50 for IEEE members.

See <http://www.ieeeusa.org/careers/employmentnavigator> for more information.

## "Public Is Winner" in Supreme Court's Electronic File-Sharing Case; Court Protects Technological Innovation in MGM vs. Grokster, Says IEEE-USA

Washington (30 June 2005) - "The public wins in the Supreme Court's unanimous decision in the electronic file-sharing case announced on 27 June," according to IEEE-USA Intellectual Property Committee Chair Andy Greenberg. Greenberg, who filed IEEE-USA's amicus curiae brief in the MGM vs. Grokster case last January, said that the Court achieved a balance between protecting against copyright infringement and promoting technological innovation. According to IEEE-USA's Greenberg, the Court recognized "the interests of artists in their work and the interests of the public to have access to dynamic and innovative technologies for obtaining and enjoying those works." As a result, IEEE-USA asserts, the public is ensured continued access to music, art and technology.

In the Court's 9-0 opinion, Justice David Souter wrote that "one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement, is liable for the resulting acts of infringement by third parties." The Supreme Court adopted an active inducement standard as advocated by IEEE-USA in its amicus brief filed with the Court. The decision imposes liability on companies that actively encourage or "induce" customers through words and deeds to infringe on copyrighted material, which focuses legal scrutiny on the company's infringing conduct rather than restricting its technology.

According to Justice Souter, the active inducement rule "does nothing to compromise legitimate commerce or discourage innovation having a lawful promise." He added that patent law's commerce doctrine, now codified, "leaves breathing room for innovation and a vigorous commerce."

Innovation will not be stifled, according to Justice Souter, who said: "We are, of course, mindful of the need to keep from trenching on regular commerce or discouraging the development of technologies with lawful and unlawful potential...The inducement rule...premises liability on purposeful, culpable expressions and conduct, and thus does nothing to compromise legitimate commerce or discourage innovation having a lawful promise."

IEEE-USA's Greenberg noted: "Active inducement has been part of patent law for more than 100 years, and has stood the test of time. In all that time, the sky has not fallen for technology companies in patent law," and it can be assumed "that a parade of 'horribles' will not follow under copyright principles."

To read the Court's opinion, see <http://wid.ap.org/scotus/pdf/04-480P.ZO.pdf>.

To view IEEE-USA's amicus brief in the case, go to <http://www.ieeeusa.org/policy/POLICY/2005/MGMvGrokster.pdf>.

For more on inducement, visit IEEE-USA's website at <http://www.ieeeusa.org/policy/issues/INDUCE/index.html>.

## **IEEE-USA In Action: IEEE-USA Intellectual Property Committee Chair Shares Perspective on File- Sharing Case in USA Today**

Washington (1 July 2005) - The Supreme Court recently adopted the active inducement standard IEEE-USA first proposed in the MGM vs. Grokster electronic file-sharing case. Andy Greenberg, IEEE-USA's intellectual property committee chair, shared his perspective on the opinion with a letter published Friday in USA Today (p. 11A).

Greenberg, who co-authored the amicus curiae brief IEEE-USA filed in the case, wrote in USA Today that, "By adopting the active inducement standard ... the Supreme Court found an elegant and just balance to preserve technological innovation and prevent copyright infringement. ... This week, the public won."

USA TODAY has the highest circulation of any newspaper in the United States, averaging more than 2.25 million copies every weekday.

To view an electronic copy of Greenberg's letter, go to [http://www.usatoday.com/news/opinion/editorials/2005-06-30-letters-court\\_x.htm](http://www.usatoday.com/news/opinion/editorials/2005-06-30-letters-court_x.htm).

For more on IEEE-USA's participation in this case, visit <http://www.ieeeusa.org/policy/issues/induce/index.html>.

For more IEEE-USA in the News items, go to <http://www.ieeeusa.org/communications/inthe news/default.asp>.

## **IEEE Virtual Museum Exhibit Gets Accolades**

The IEEE Virtual Museum (<http://www.ieee-virtual-museum.org>) has launched its latest exhibit, "Songs in the Key of E," which explores the numerous ways electronics have been used to create music. With examples such as the singing arc, the theremin and the synthesizer, among others, the exhibit highlights both the inventors of electronic instruments and the instruments themselves, and uses audio clips to demonstrate the various sounds.

This is the eighth IEEE Virtual Museum exhibit since its launch in 2002. Aimed at pre-college students and their educators, the museum explores the global impact of

electrical and information sciences and technologies to demonstrate how relevant engineers are to society.

The new exhibit has garnered accolades for the IEEE and the Virtual Museum from THOMASNET ([http://news.thomasnet.com/IMT/archives/2005/03/engineering\\_a\\_s.html?WT.mc\\_t=imt&WT.mc\\_n=site\\_entry](http://news.thomasnet.com/IMT/archives/2005/03/engineering_a_s.html?WT.mc_t=imt&WT.mc_n=site_entry)), a blog for the industrial market managed by Thomas Publishing Company. In addition to praising the IEEE, the reporter noted that the IEEE Virtual Museum is the first he's visited that is like a real museum, with "great photos" and well-researched "substance." He called the new exhibit about electronic music "fascinating" and commented, "It's warming to see just one of countless forms of engineering that is so very human."

## **The NJ Section Education Committee Requests Your Feedback**

The IEEE North Jersey Section has been helping fellow engineering professionals for the last fifty years. The Education Committee has successfully conducted software and engineering training courses over the last few decades. The Committee is committed to professional development of the members and the instructors for the courses are very qualified and experienced in their respective fields. Classes are arranged on weekday evenings or on Saturdays provided at least fifteen candidates are available. Completion certificates are issued by IEEE Headquarters with CEU credits for the number of training hours.

Due to the slow growth of the economy and several other factors, registration for these courses has diminished over the last few years. I would urge members to send their feedback regarding what courses they would be interested in, the format, location, and day/time, etc., by email to [b.chivukula@at.computer.org](mailto:b.chivukula@at.computer.org).

Regards,  
Bhanu Chivukula  
Chair, Education Committee  
Vice Chair, IEEE North Jersey Section

## **IEEE-USA President to be Inducted into New Jersey Inventors Hall of Fame**

Washington (10 June 2005) - IEEE-USA President Dr. Gerard A. Alphonse of Princeton, NJ, was inducted into the New Jersey Inventors Hall of Fame on 23 June.

An IEEE Fellow who holds more than 50 U.S. patents, Alphonse is being honored for his "prolific work in diverse cutting-edge technologies, including superconductivity, acoustic emissions and electro-optics." Former inductees include Thomas Edison and Albert Einstein.

"I never dreamed of joining the ranks of such prestigious inductees," Alphonse said. "I feel both proud and humbled to receive such a great honor and mark of distinction, with my name joining those of famous inventors."

Alphonse invented and demonstrated the world's highest performance superluminescent diode in 1986. The device is a broadband semiconductor light source and key component of next-generation fiber optic gyroscopes, low coherence tomography for medical imaging, and external cavity tunable lasers with applications to fiber optic communications.

Alphonse is a founder and senior vice president of advanced technologies for Medeikon Corp., an optical technology developer for medical diagnostics and therapy in Ewing, NJ. The company is currently developing a new product for the cardiac diagnostics industry to assist in the treatment of coronary artery disease.

Alphonse and three others were selected for the New Jersey Inventors Hall of Fame by the New Jersey Research and Development Council, a nonprofit association dedicated to creating a strong, healthy environment for the continued growth of R&D within the state. The council also recognizes inventors, innovators and graduate students.

The honorees were recognized at a luncheon at the New Jersey Institute of Technology in Newark, NJ, on Thursday 23 June at noon. For information on past award winners, go to [www.njinvent.org](http://www.njinvent.org).

# 2005 Awards Banquet

## IEEE Region 1 Service Awards



Wayne Owens – For dedicated service to the IEEE North Jersey Section and Engineering Management Chapter



Har Dayal – For dedicated service to the IEEE North Jersey Section and the MTT/AP Society

### ***William Terry Distinguished Lifetime Service Award***



Ken Oexle – For a lifetime of sustained, dedicated and wide-ranging service to the IEEE at the Section, Council and Chapter levels

### ***IEEE Regional Activities Board Leadership Award***



Dr. Durgamadhab Misra – For promoting IEEE membership and activities within the North Jersey Section

### ***PES Chapter Outstanding Engineer Award***



Anne Giedlinski – For leadership and outstanding contributions in the fields of distribution engineering and service to the North Jersey PES Chapter and Section





From left – Mr. and Mrs. Won Kim, Thomas Wood, and Iwan Santoso



From left – Paul Ward and Richard Tax accepted the Alex Gruenwald Award on behalf of the Section.  
They are joined by family members.





From left – Barry Perlman, Mrs. Perlman, Willie Schmidt, and Richard Snyder



From left – Ron Quade – PES Chair, Ken Oexle – Awards Chair, and Roland Dixon – IEEE Region 1 PES Chapter Representative, present PES Outstanding Engineer Award to Anne Giedlinski

## Life Grade Luncheon

The PES Chapter and the Section will sponsor a luncheon for North Jersey IEEE Life Grades (Members, Senior Members and Fellows) on Thursday October 20 at the Hamilton Park Conference Center, 175 Park Ave, Florham Park, NJ 07932. The luncheon will begin at 11:30 AM in the Terrace area. Cost is \$ 5.00 per person.

Advance registration is required prior to October 11. We can accommodate only 30 people. Registrations will be processed in the order of receipt and will be confirmed by return mail. Please complete the following registration form and include a check Payable to the North Jersey Section IEEE in the amount of \$5.00 per person.

Reservations cannot be accepted at the door. For additional information contact Ken Oexle (973) 386-1156.

---

IEEE Life Grade Luncheon Registration NJ Oct 20, 2005

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

IEEE # \_\_\_\_\_ Life Grade \_\_\_\_ Yes

Return to: Ken Oexle  
11 Deerfield Rd  
Whippany, NJ 07981

Prior to October 11 and enclose a \$5.00 check payable to **NJ Section IEEE**

**THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, INC.**



**IEEE NORTH JERSEY SECTION**

**MTT-Society and AP-Society Joint Chapter**



PRESENT

**20<sup>TH</sup> ANNUAL SYMPOSIUM AND MINI-SHOW**

**FOCUS: SELECTED TOPICS IN RF AND MICROWAVE COMMUNICATION**

**Thursday, October 6, 2005**

**Prime Hotel & Suites (formerly Radisson Hotel Fairfield)**

**690 Route 46 East, Fairfield NJ (973) 227-9200**

**SCHEDULE OF EVENTS**

- **9:30 AM TO 6:00 PM - MINI SHOW FEATURING LATEST PRODUCTS (Approx. 30-40 Exhibitors)**
- **9:00 AM TO 5:30 PM - TECHNICAL SESSIONS**
- **10-12 - LECTURES FEATURING SPEAKERS FROM LEADING COMPANIES WITH EMPHASIS ON MILITARY ELECTRONICS, WIRELESS TECHNOLOGIES AND MICROWAVE COMMUNICATIONS.**

**(COMPLIMENTARY LUNCH SERVED)**

Details of the schedule, speakers and topics can also be found at the IEEE North Jersey Section Newsletter webpage:

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

For further information contact

Chair/Exhibition:	Kirit Dixit	(201) 669-7599	kdixit "AT" ieee.org
Publicity:	Arthur Greenberg	(973) 386-6673	ahg1 "AT" lucent.com
Event/Location Coordinator:	Ken Oexle	(973) 386-1156	
Section Chair/Coordinator:	Har Dayal	(973) 633-4618	har.dayal "AT" baesystems.com
Technical Program Chair:	George Kannell	(973) 386-4170	gkk "AT" lucent.com

**THERE IS NO CHARGE TO ATTEND THE SYMPOSIUM OR SHOW**

# NJ Power Engineering Society/Industry Applications Society

## Advanced Concepts in Transformer Protection Technical Seminar

The PES and IAS Chapters will sponsor a one-day seminar covering Advanced Concepts in Transformer Protection. The session will be held on Friday, October 28 at the PSE&G Training Center, 234 Pierson Ave, Edison, NJ.

**Topics** (A more detailed syllabus is available at <http://web.njit.edu/~ieeenj/NEWSLETTER.html>)

### Protection of Power Transformers

1. Modes of Transformer Failure
2. Types of Protection
3. Mechanical
4. Electrical
5. Unique factors for differential electrical protection
6. Special concerns
7. Back up protection

### Setting a Relay – Overcoming Engineering Challenges

1. Configure relay to “the outside world”
2. Element enabling
3. Element setting
4. Setting groups
5. Purposes and configuration
6. Input / Output Matrixing (Marshalling)
7. Programmable logic
8. Set point review & printout
9. Input / Output review & printout
10. File saving & recall (file management)

### Commissioning of Transformer Differential Protection Systems

1. Phasing Issues
2. Polarity Issues
3. Injection Testing
4. Load Testing
5. Tools for Commissioning

### **About the Instructor**

The instructor will be Chuck Mozina, Consulting Engineer with Beckwith Electric. Chuck Mozina is a Contract Consultant, Protection and Protection Systems for Beckwith Electric Company, Inc., specializing in power plant and generator protection. His consulting practice involves projects relating to protective relay applications, protection system design and coordination.

Chuck is an active 20-year member of the IEEE Power System Relaying Committee (PSRC) and is the past chairman of the Rotating Machinery Subcommittee. He is active in the IEEE IAS I&CPS committee, which addresses industrial protection system. He is the past U.S. representative to the CIGRE Study Committee 34 on System Protection and has chaired a CIGRE working group on generator protection. He also chaired the IEEE task force that produced the tutorial "The Protection of Synchronous Generators," which won the PES's 1995 Outstanding Working Group Award. Chuck is the 1993 recipient of the PSRC's Career Service Award.

Chuck has a Bachelor of Science in Electrical Engineering from Purdue University and has authored a number of papers and magazine articles on protective relaying. He has over 25 years of experience as a protective engineer at Centerior Energy, a major investor-owned utility in Cleveland, Ohio where he was the Manager of the System Protection Section. For the past ten years, he was Application Manager for Protection Products with Beckwith Electric Company. He is also a former instructor in the Graduate School of Electrical Engineering at Cleveland State University. He is a registered Professional Engineer in the state of Ohio.

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.

The registration fee for this seminar prior to October 14<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 October 14<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.

**Time:** 9:00 AM to 1:00 PM followed by lunch, Friday, October 28, 2005.

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

**Directions:** [www.pseg.com/customer/business/small/facility/edison\\_directions.jsp](http://www.pseg.com/customer/business/small/facility/edison_directions.jsp)

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

**Registration:** Beckwith Transformer Protection, 10/28/2005

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 October 14<sup>th</sup>

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

# NJ Power Engineering Society/Industry Applications Society

## Upgrade of Generator Protection to Comply With IEEE Guides

### Technical Seminar

The PES and IAS Chapters will sponsor a one-day seminar covering the Upgrade of Generator Protection to Comply with IEEE Guides. The session will be held on Friday, November 18 at the PSE&G Training Center, 234 Pierson Ave, Edison, NJ.

**Topics** (A more detailed syllabus is available at <http://web.njit.edu/~ieeenj/NEWSLETTER.html>)

1. Quality Issues and Standards
2. Latest Generator Protection Developments
3. Review of Grounding Techniques
4. Types of Generator Connections
5. Improved Sensitivity
6. Improved Security
7. Abnormal Frequency
8. Protections Against External Device Failure
9. Operating, Commissioning and Analysis Tools
10. Communications

#### About the Instructor

The instructor will be Chuck Mozina, Consulting Engineer with Beckwith Electric. Chuck Mozina is a Contract Consultant, Protection and Protection Systems for Beckwith Electric Company, Inc., specializing in power plant and generator protection. His consulting practice involves projects relating to protective relay applications, protection system design and coordination.

Chuck is an active 20-year member of the IEEE Power System Relaying Committee (PSRC) and is the past chairman of the Rotating Machinery Subcommittee. He is active in the IEEE IAS I&CPS committee, which addresses industrial protection system. He is the past U.S. representative to the CIGRE Study Committee 34 on System Protection and has chaired a CIGRE working group on generator protection. He also chaired the IEEE task force that produced the tutorial "The Protection of Synchronous Generators," which won the PES's 1995 Outstanding Working Group Award. Chuck is the 1993 recipient of the PSRC's Career Service Award.

Chuck has a Bachelor of Science in Electrical Engineering from Purdue University and has authored a number of papers and magazine articles on protective relaying. He has over 25 years of experience as a protective engineer at Centerior Energy, a major investor-owned utility in Cleveland, Ohio where he was the Manager of the System Protection Section. For the past ten years, he was Application Manager for Protection Products with Beckwith Electric Company. He is also a former instructor in the Graduate School of Electrical Engineering at Cleveland State University. He is a registered Professional Engineer in the state of Ohio.

-----  
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.

The registration fee for this seminar prior to November 4<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 November 4<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.

**Time:** 9:00 AM to 1:00 PM followed by lunch, Friday, November 18, 2005.  
**Place:** PSE&G Training Center, 234 Pierson Ave, Edison NJ.  
**Directions:** [www.pseg.com/customer/business/small/facility/edison\\_directions.jsp](http://www.pseg.com/customer/business/small/facility/edison_directions.jsp)  
**Information:** Ronald W. Quade, PE, (732) 205-2614 or [rwquade "AT" ieee.org](mailto:rwquade@at.ieee.org).

*Registration: Beckwith Generator Protection, 11/18/2005*

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 November 4<sup>th</sup>

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

North Jersey Section  
**Oracle SQL Programming 101**

**Seminar Objective**

This 4 hour course will teach you how to work with data within an Oracle Database using SQL and SQL\*Plus.

**Seminar Design Outline**

- Principal features of the Oracle database
- Query and manipulate an Oracle database using Structured Query Language
- Code sophisticated query operations such as join, grouping, case and more
- Update data with insert, update, delete, and merge operations
- Create database tables with the major data types such as NUMBER, VARCHAR2
- Create B-Tree indexes to improve the performance of query operations
- Query Oracle data dictionary tables such as USER\_TABLES
- Utilize transaction control statements such as Commit, Rollback and Savepoint
- Create database objects such as tables, views, indexes, synonyms and sequences
- Grant and Revoke object privileges
- Utilize SQL\*Plus to query, update and create database objects
- Use SQL\*Plus scripting and report generation features

**About the Speaker**

The speaker is scheduled to be Raj Agarwal, DBA.

**Time:** TBA, September 2005.

**Place:** TBA – see <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.

**Information:** see <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.

North Jersey Section  
**Field Programmable Gate Array Seminar**

**Seminar overview**

**FPGA stands for Field Programmable Gate Array. FPGAs are becoming the de facto standard in digital design. They are found in control, DSP and general purpose computing. They offer designers the ability to go to layout before committing to the full design.**

**This seminar will introduce FPGAs and provide a road map on how to learn and become productive in the use of FPGAs. Development will be used by the instructor to execute labs.**

**Seminar Design Outline**

- **Introduction to FPGA**
- **FPGA architecture**
- **Xilinx Design Flow**
  - ↳ **Architecture Wizard and Pace**
  - ↳ **Reading Reports**
  - ↳ **Global Timing Constraints**
- **Synthesis Techniques**
  - ↳ **XILINX CORE Generator**
  - ↳ **Floorplanner: Effective Layout**
- **FPGA Editor: Viewing and Editing a Routed Design**
  - ↳ **HDL Bencher**
- **FPGA Design Techniques**
- **Synchronous Design Techniques**

**About the Speaker**

**Mr. Chibane Cherif, is a practicing engineer, speaker and lecturer in telecommunications, wireless communication and Voice Over IP technology, business and market issues.**

**Pre-requisite**

**Basic Digital design**

**Time:** TBA, September 2005.

**Place:** TBA – see <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.

**Information:** see <http://web.njit.edu/~ieeenj/> and upcoming Newsletters for updates.



# IEEE North Jersey Section Course Project Management

*Tuesday Evenings, October 11, 2005 through November 29, 2005  
Eight weekly classes (October 11, 18, 25, November 1, 8, 15, 22, 29, 2005)*

*NJ International Bulk Mail Center, Jersey City, NJ (Checks should not be mailed to this address)*

The North Jersey Section IEEE is offering an evening course entitled "Project Management". Dice.com lists 2500+ Project related jobs in the New York tri-state area daily! This course will help you to break down a master project into manageable tasks, pinpoint possible solutions, and provide information to keep the project under control. Using Microsoft Project 2003 software, you will learn to accomplish various project plans. In addition, it will greatly enhance your business, communications and interpersonal skills.

The IEEE certificate of completion will be given to you when you complete the course. You may wish to take two Certification exams, one in Project Management administered by Project Management Institute and the other in IT Project+ by CompTIA Inc.

Instructor: Donald Hsu, PhD, has been a corporate manager for 11 years and is an experienced trainer. Since 1999, he has trained 270+ people in IT Project+, MS Project 2003, and Project Management courses in seven organizations.

## TOPICS

1. Explain the need for a project manager
2. Define SOW, PERT, GANTT, CPM, and Scope of the project
3. Identify the team members, resources and plan for the strategy
4. Calculate schedule, budget variances, and monitor project progress
5. Manage changes, estimates, and communications
6. Set a baseline, import tasks from MS Excel, export Project files to MS Word
7. Create and modify custom reports, templates and combination views
8. Share resources and create a master plan loaded to Project Server
9. Approve updates and conclude a project plan
10. Analyze Global E-Commerce and present student Projects

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after October 2, 2005 will require a late fee of \$25. No reservations will be accepted after October 6, 2005.

**WHERE:** NJ International Bulk Mail Center, Jersey City, NJ. (Checks **should not** be mailed to this address)

**WHEN:** 8 Tuesdays, October 11, 18, 25, November 1, 8, 15, 22, 29, 2005, 6:30-9:00 PM.

**COST:** IEEE (& affiliate) members \$375; Non-IEEE members \$475.

**CONTACT:** Bhanu Chivukula (b.chivukula "AT" computer.org)

## REGISTRATION: Project Management

Please email details to **b.chivukula "AT" computer.org** and upon confirmation, the address where to mail a check with details as described under, would be replied **(Checks payable to "North Jersey Section IEEE" with registration form should be mailed to this address)**

Name: / Mr. / Mrs. / Miss / Ms. / \_\_\_\_\_

Non-member

✉ email address ✉

IEEE Member Member #: \_\_\_\_\_ Member of \_\_\_\_\_ technical society

Employer: \_\_\_\_\_

Employer Address: \_\_\_\_\_

Home Address: \_\_\_\_\_

Business (day) telephone #: \_\_\_\_\_ Home telephone #: \_\_\_\_\_

Please enclose required fee payable to: **North Jersey Section IEEE**

Registration status will be mailed after October 6, 2005. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

Tuition receipt will be mailed only if this box is checked

Signature: \_\_\_\_\_