

The



IEEE Newsletter

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

NJ MTT-S/AP-S Ch:

60 GHz Antenna-in-Package Design and Evaluation

On April 17, 2007, the IEEE NJ Section MTT-S/AP-S along with NJIT will host a talk on "60 GHz Antenna-in-Package Design and Evaluation." The speaker will be Dr. Duixian Liu.

About the Talk

Millimeter Wave (MM Wave) antennae and package integration designs are significantly more challenging than antenna designs for frequencies below 10 GHz. In addition to wide impedance bandwidth, high efficiency and small size, one has to consider material selection, manufacturing precision; antenna feed line connections, and electromagnetic interference to the nearby active RF circuits. Antenna evaluations and suitability for mass productions are paramount consideration to capture, high volume auto, pc and other markets.

The talk will discuss single linearly and circularly polarized antennas as well as eight-element patch array antennae for 60 GHz package applications. The future researches in this area will also be discussed.

About the Speaker

Dr. Duixian Liu (S'85-M'90-SM'98) received his BS degree in electrical engineering from XiDian University in Xi'an, China in 1982, MS and PhD degrees in electrical engineering from the Ohio State University in Columbus, Ohio in 1986 and 1990, respectively. From 1990 to 1996, he worked for Valor Enterprises Inc. in Piqua, Ohio, first as an electrical engineer and then the chief engineer and designed antenna product line ranging from 3 MHz to 2.4 GHz for the company, a very important factor for the prestigious Presidential "E" Award for Excellence in Exporting in 1994.

He has been with IBM at Thomas J. Watson Research Center as a research staff member since April 1996. His research interests are antenna design, electromagnetic modeling, digital signal processing, and communications

technology. He twice received the IBM's outstanding technical achievement awards in 2001 and 2002, and IBM Corporate Award (IBM's highest technical award) in 2003 for contributions to the integrated antenna subsystems for laptop computers. He has fifteen patents issued and sixteen patents pending. He has published more than forty journal and conference papers and organized and chaired many sessions in several international conferences. He is an associate editor for Antenna and Propagation technical journal.

All Welcome!

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

Time: 7:00PM, Thursday, April 17, 2007. Free buffet dinner will be available at 6:30 PM.

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

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

Region 1 Award Nominations

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

www.ieee.org/r1

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

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

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

April 2008

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

IEEE NJ SECTION HOME PAGE

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

IEEE NJ SECTION NEWSLETTER HOME PAGE

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

REPORT ADDRESS CHANGES TO:

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

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

NJ Computer Chapter:

TRAP-Array: A Disk Array Architecture Providing Timely Recovery to Any Point-in-time

On Friday, April 18, 2008, the IEEE North Jersey Section Computer Chapter and the NJIT Department of Electrical and Computer Engineering will host a presentation entitled "TRAP-Array: A Disk Array Architecture Providing Timely Recovery to Any Point-in-time". The speaker will be Prof. Qing Yang of the Department of Electrical and Computer Engineering, The University of Rhode Island.

About the Talk

RAID architectures have been used for more than two decades to recover data upon disk failures. Disk failure is just one of the many causes of damaged data. Data can be damaged by virus attacks, user errors, defective software/firmware, hardware faults, and site failures. The risk of these types of data damage is far greater than disk failure with today's mature disk technology and networked information services. It has therefore become increasingly important for today's disk array to be able to recover data to any point in time when such a failure occurs. This paper presents a new disk array architecture that provides Timely Recovery to Any Point-in-time, referred to as TRAP-Array. TRAP-Array stores not only the data stripe upon a write to the array, but also the time-stamped Exclusive-ORs of successive writes to each data block. By leveraging the Exclusive-OR operations that are performed upon each block write in today's RAID4/5 controllers, TRAP does not incur noticeable performance overhead. More importantly, TRAP is able to recover data very quickly to any point-in-time upon data damage by tracing back the sequence and history of Exclusive-ORs resulting from writes. What is interesting is that TRAP architecture is amazingly space-efficient. We have implemented a prototype TRAP architecture using software at block device level and carried out extensive performance measurements using TPC-C benchmark running on Oracle and PostgreSQL databases, TPC-W running on MySQL database, and file system benchmarks running on Linux and Windows systems. Our experiments demonstrated that TRAP is not only able to recover data to any point-in-time very quickly upon a failure but it also uses less storage space than traditional daily

differential backup/snapshot. Compared to the state-of-the-art continuous data protection technologies, TRAP saves disk storage space by one to two orders of magnitude with a simple and a fast encoding algorithm. From an architecture point of view, TRAP-Array opens up another dimension for storage arrays. It is orthogonal and complementary to RAID in the sense that RAID protects data in the dimension along an array of physical disks while TRAP protects data in the dimension along the time sequence.

About the Speaker

Qing Yang received the BSc in computer science from Huazhong University of Science and Technology, Wuhan, China, in 1982, the MASc in electrical engineering from University of Toronto, Canada, in 1985, and the PhD degree in computer Engineering from The Center for Advanced Computer Studies, University of Louisiana, Lafayette, in 1988. Presently, he is Distinguished Engineering Professor in the Department of Electrical and Computer Engineering at The University of Rhode Island where he has been a faculty member since 1988. His research interests include computer architectures, memory systems, disk I/O systems, data storages, parallel and distributed computing, performance evaluation, and local area networks. Dr. Yang is a Senior Member of the IEEE Computer Society and a member of the SIGARCH of the Association for Computing Machinery.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends and network both before and after the meeting.

Time: 11:45 AM, Friday, April 18, 2008. Refreshments will be available at 11:30 AM.

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

Information: Professor Jie Hu (973) 596-5273, jhu "AT" njit.edu, Professor Mengchu Zhou, (973) 596-6282, mengchu.zhou "AT" njit.edu, Seth Jakel, (973) 731-1902 or (973) 820-1865, sgjakel "AT" comcast.net, or Howard Leach, (973) 540-1283, hhleach "AT" aol.com.

IEEE North Jersey Section Activities

April 2008

Apr. 2 – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at rpepe “AT” att.net.

Apr. 9 – “Electron Devices in Astronomy” by Dr. Lucian Kasprzak, NJ EDS/C&S Chapters, 7:00 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).

Apr. 9 – “Engineers Meet: Patenting Your Invention” with Michael J. Feigin, Esq., NJ PACE, GOLD, WIE, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625, PWard1130 “AT” aol.com, Richard F. Tax, (201) 664-6954, rftax “AT” verizon.net.

Apr. 17 – “60 GHz Antenna-in- Package Design and Evaluation” by Dr. Duixian Liu, NJ MTT-S/AP-S Chapters, 7:00 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, or Har Dayal (973) 633-4618, har.dayal “AT” baesystems.com.

Apr. 18 – “TRAP-Array: A Disk Array Architecture Providing Timely Recovery to Any Point-in-time” by Professor Qing Yang, NJ Computer Chapter, 11:45 AM, New Jersey Institute of Technology (NJIT), Room 202, ECE Center (Intersection between Warren & Summit Streets), Newark, NJ. Professor Jie Hu (973) 596-5273, jhu “AT” njit.edu, Professor Mengchu Zhou, (973) 596-6282, mengchu.zhou “AT” njit.edu, Seth Jakel, (973) 731-1902 or (973) 820-1865, sgjakel “AT” comcast.net, or Howard Leach, (973) 540-1283, hhleach “AT” aol.com.

Apr. 24 – “How We Survived a Professional Website Redesign” by Pat Banker, 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.

Apr. 25 – “Harmonics Seminar”, NJ PES/IAS, 9:00AM to 2:00PM, PSE&G - Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ. Ronald W. Quade, PE, (732) 205-2614 or rwquade “AT” ieee.org.

Apr. 25 & 26 – “Region 1 Student/GOLD Conference”, NJ SAC-GOLD-WIE, 6:00 PM to 9:00 PM, Fairleigh Dickinson University, 1000 River Road, Teaneck, NJ. Russell Pepe, rpepe “AT” att.net.

Apr. 26 – “Career Fair”, NJ SAC-GOLD-WIE, 10:00 AM to 4:00 PM, Fitness Center, Fairleigh Dickinson University, 1000 River Road, Teaneck, NJ. Uri Moszkowicz, (508) 736-1926, uim “AT” ieee.org.

Apr. 25-27 – “Trenton Computer Festival”, Friday 9:00 AM to 5:00 PM, Saturday 10 AM to 5 PM, and Sunday 10:00 AM to 4:00 PM, The College of New Jersey in Ewing, NJ. Allen Katz, TCF Speaker Program Chairperson, a.katz “AT” ieee.org or (609) 771-2666.

Apr. 28-30 – “2008 Sarnoff Symposium”, Nassau Inn, Princeton, NJ. See details at <http://www.sarnoffsymposium.org>.

Upcoming Meetings

May 4 – “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 7 – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 77 River Rd, Clifton, NJ. Russell Pepe at rpepe “AT” att.net.

Aug. 13 – “Engineers Meet: State of IEEE and Proposed Improvements” with Dr. John Vig, NJ PACE, GOLD, WIE, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625, PWard1130 “AT” aol.com, Richard F. Tax, (201) 664-6954, rftax “AT” verizon.net.

Oct. 2 – “2008 MTT/AP Symposium and Mini-Show” – MTT-S/AP-S Chapter, 9:00 AM - 4:30 PM, Hanover Manor, 16 Eagle Rock Avenue, E. Hanover, NJ. Kirit Dixit (201) 669-7599 (kdixit “AT” ieee.org), Art Greenberg (973) 386-6673 (ahg1 “AT” alcatel-lucent.com), Har Dayal (973) 633-4618 (har.dayal “AT” baesystems.com), or George Kannell (973) 386-4170 (gkk “AT” gsinnovations.com).

Members and Non-Members Welcome

PLEASE POST

2007 IEEE North Jersey Fellow

Ronald J. Brachman

"for leadership in knowledge representation and reasoning in computer science and artificial intelligence."



Ron Brachman is Vice President of Worldwide Research Operations at Yahoo! Research, the advanced research arm of the worldwide leader in Internet services. Among his duties, Dr. Brachman heads the Yahoo! Research lab in New York City. He is also the head of Yahoo!'s Academic Relations organization. Between 2002 and 2005, Brachman served as the Director of DARPA's Information Processing Technology Office, and there developed DARPA's Cognitive Systems initiative, which brought hundreds of millions of dollars to the national research community. For this effort he was awarded The Office of the Secretary of Defense Medal for Exceptional Public Service.

Dr. Brachman earned his BSEE degree from Princeton University, and his SM and PhD degrees from Harvard University. He has made numerous important contributions to Artificial Intelligence, including developing the cornerstone ideas behind the subfield of Description Logics, which has had substantial influence in the development of the Semantic Web. He has been awarded best paper and "Classic Paper" awards, and has published an important textbook with Hector Levesque, *Knowledge Representation and Reasoning*. Brachman started his career at Bolt Beranek & Newman in Cambridge, MA; spent several years at the Fairchild/Schlumberger Lab for AI

Research in Palo Alto, CA; and, having developed a world-class AI group at AT&T Bell Laboratories in New Jersey, moved into senior research management jobs at Bell Labs and AT&T Labs. Brachman was President of the American Association for Artificial Intelligence from 2003-2005. He is a Founding Fellow of AAAI and is a Fellow of the ACM. At the International Joint Conference on Artificial Intelligence in January of 2007 he was awarded the Donald E. Walker Distinguished Service Award.

NJ Section PACE, GOLD, & WIE:

Engineers Meet:

Patenting Your Invention

On April 9, 2008 the North Jersey Section Professional Activities PACE Committee, GOLD, Graduates of the Last Decade and WIE, Women in Engineering will meet for a presentation about the process and value of obtaining a Patent.

About the Meeting

This meeting is about getting members of the Section together to learn about the Profession and business side of Engineering.

This presentation is geared towards engineers and other sophisticated inventors on the process and value of obtaining a patent.

The presentation is divided into four sections: I. An overview of patents and examples of companies made and broken on patent protection; II. "What is a Patent?" including the types of patents and what is patentable subject matter; III. The process of preparing a patent and procedures which should be in place at your company to protect your rights; and IV. Obtaining a patent at the U.S. and foreign Patent offices.

Bring your associates, friends and spouses.

About the Speaker

Michael J. Feigin, Esq., our guest speaker is a licensed Patent and Trademark Attorney. He is registered to practice before the U.S. Patent Office and has experience drafting and prosecuting applications for AT&T, Rus-Engineering, Vodaphone, and other large, small, and individual entities primarily in the fields of software, telecommunications, wireless technology, and the like. Before beginning his career as a Patent Attorney, Mr. Feigin ran his own IT consulting business, worked for Dorm Networking at Rutgers University, New Brunswick and developed websites. In addition to a law degree, Mr. Feigin holds a degree in Biological Sciences from Rutgers University and enjoys learning about almost any topic.

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
www.ieeeusa.org/policy/care/
www.ieeeusa.org
www.programmersguild.org
<http://web.njit.edu/~ieeenj/>
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/.

Time: 6:30 PM to 9:00 PM, Wednesday, April 9, 2008. 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, Richard F. Tax, (201) 664-6954, rftax "AT" verizon.net.

IEEE-USA in Action:

IEEE-USA Unveils '2007 Online Annual Report' Addressing Globalization Priorities

For an overview of IEEE-USA's 2007 activities in building careers and shaping public policy, see http://www.ieeeusa.org/about/Annual_Report/2007.pdf.

In 2007, IEEE-USA President John W. Meredith and the IEEE-USA Board of Directors reaffirmed three broad priorities: promoting innovation through legislation and other means to ensure the competitiveness of U.S. industry in IEEE-USA's fields of interest; providing practicing engineers with tools and resources that support their career endeavors; and encouraging continuing education for sustainable careers, as well as focusing on precollege math and science education.

After 29 February, the "IEEE-USA 2007 Online Annual Report" will also be available to members without charge as an e-book at <http://www.ieeeusa.org/communications/eBooks/default.asp>.

Contact: Pender M. McCarter
Senior Public Relations Counselor
IEEE-USA
Phone: (202) 530-8353
p.mccarter@ieee.org

NJ EDS/C&S Chapters: Electron Devices in Astronomy

On April 9, 2008, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with the New Jersey Institute of Technology will host a talk on "Electron Devices in Astronomy." The speaker will be Dr. Lucian Kasprzak.

About the Talk

Gazing at the stars has intrigued man since the dawn of the first civilizations. Available technology and mathematics have helped man posit answers to the questions of man's place in the universe, how it came about, where it is headed and what it means. Ancient cultures used the solar and lunar cycles, as well as the cycle of the stars, to perfect agriculture and attempt to predict the future as well as posit theories of the universe. Modern man is no exception and continues this paradigm.

Electron devices, in the twenty first century, are present in literally everything that touches man, both directly and indirectly. Electron devices in many embodiments have also brought astronomy to new heights of observational perfection. The precision now achievable, facilitated by the use of electron devices, permits a new level of refinement for both theory and experiment. The largest earthbound telescopes in use today are typically 10 meters, compared to Hubble Space Telescope at 2.4 meters. New telescopes, in the 25, 50 and 100 meter range, are in design or construction around the world. The specific electron device applications used in modern telescopes include detectors, encoders, actuators, feedback control systems, custom computers and computer programs. These devices and innovations have enabled a series of telescope improvements, such as, active optics (mirror shape correction), adaptive optics (atmospheric turbulence correction), interferometry and large baselines.

Since one objective of astronomy is observation, the question of resolution and sensitivity of the tools for observing become a paramount concern for those doing the observation. The theoretical resolution of a telescope is the diffraction limited distance between two discernable objects. This limit is rarely even approached for telescopes with primary diameters greater than about 20 cm. The problem has to do with nature of the objects being imaged (points of light) and the aberrations inherent in optical instruments, which are dependant upon the perfection of the curvature of the lenses or reflectors used to form the

image. The technique known as active optics makes corrections to the curvature of the primary mirror to reduce or eliminate these aberrations. Properly placed and monitored electron devices have made active optics a reality for modern telescopes.

Sensitivity of a telescope implies how faint an object can be resolved or seen. It depends upon the detector, signal and noise, as well as how well the object in question can be tracked as it moves across the night sky. Modern low noise CCD detectors and precise tracking mechanisms opened a new era in telescope imaging and photometry.

Seeing, as used astronomy, means how much is the image blurred by turbulence in the air between the telescope and the vacuum of space. The Hubble Space Telescope sees very well because it is in orbit above the earth's atmosphere. Earth bound telescopes today use adaptive optics (AO) to correct for this blurring. AO uses the turbulence information, from a guide laser in the direction of the object being viewed, to make real time correction to the image received by the CCD detectors. This method is so effective that properly instrumented earth bound telescopes can see objects as well as, or in some cases, better than the Hubble Space Telescope.

The contribution of electron devices, to these advances and others, will be presented in the context of the general objectives of astronomy.

About the Speaker

Dr. Kasprzak worked for IBM from 1965 to 1995. He obtained his PhD on an IBM Resident Fellowship in 1972 from Stevens Institute of Technology. He taught at Franciscan University from 1992

to 1996. Since 1996 he has worked in the healthcare industry, first on solid state x-ray detectors for Direct Radiography Inc.(an eventual subsidiary of Hologic Inc.), and now on large clinical chemistry analyzer instruments for Dade Behring, recently purchased by Siemens.

His work has focused on the physics and materials of electron devices. In practice he has developed reliability tests to reveal the limitations of electron devices, materials, VLSI circuits and PCBs. In 1973 he discovered the hot electron effect in very short (1.25 micron n-channel) MOSFETs.

He has taught Astronomy and Cosmology as well as Physics and Materials at Franciscan University. His experience, coupled with his interest and study of astronomy, brings a unique perspective to the application of electron devices in astronomy.

He is the founder of IEEE transactions on Device and Materials Reliability, treasurer of IEEE transactions on Semiconductor Manufacturing, a member of the Board of Directors of the International Reliability Physics Symposium 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, April 9, 2008. Free buffet will begin 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).

IEEE North Jersey Section Education Committee

- ran courses: C, C++, Java, Advanced Java and C# programming successfully since 1993
- 138 IEEE engineers and non-engineers took these courses and they gave excellent reviews
- We need a company that has a classroom with 10+ computers, to run the programming courses.
- Contact Donald Hsu, Education Committee Chair, yanyou@hotmail.com if you can help. Thanks!

NJ Consultants' Network: **How We Survived a Professional Website Redesign**

On Thursday, April 24, 2008, the IEEE Consultants' Network of Northern NJ (www.technologyontap.org) will host a talk on "How We Survived a Professional Website Redesign." The speaker will be Pat Banker.

About the Topic

Ever considered having your website designed by a professional? Are you afraid it might cost too much, or be a lot of work? Come hear the tell-all story of one consulting firm's voyage through these perilous waters.

In the world of consulting today, your website is a key marketing tool. Lots of us can put together a site. After all, we are engineers. But unfortunately many of our sites look like they were put together by an engineer. Worse yet, they don't bring in work. A good site is better than the phone book, better than a snail-mail flyer, better than cold calling! Better, that is, if it gets noticed, presents the right information, and makes prospects call you. To do all that, it takes a pro.

Beginning in the spring of 2007, Banker Coté set out to redesign a dated and unmaintainable website. The new site went live at the end of the summer and the first job came in soon after. Topics to be covered include:

- The decision to hire a pro
- Finding and choosing a designer
- Going to contract
- Step by step through the design process
- Expectations vs. reality
- The aftermath

About the Speaker

Pat Banker honed her firmware development skills with 35 years experience designing embedded systems for a wide variety of applications. Her partner Art Coté is a nearly 40-year veteran electronics design engineer with in-depth product design experience including digital and analog circuitry, data acquisition, and digital signal processing. Together they founded Banker Coté in 1995 to provide convenient outsourcing of product design tasks to companies in a broad range of industries. The company's core expertise is designing products that incorporate 8 and 16 bit microprocessors, microcontrollers, or digital signal processors (DSPs). Since its inception, Banker Coté has had the privilege of helping many companies in industry, telecommunications, and healthcare develop and launch exciting new products.

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, April 24, 2008.

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. To download a map to KDI, go to: <http://www.mcekdi-integrated.com/directions.htm>.

NJ Section PACE, GOLD, & WIE: **Engineers Meet: State of IEEE and Proposed Improvements**

On Wednesday, August 13, 2008 the North Jersey Section Professional Activities Committee, Graduates of the Last Decade and Women in Engineering will host a meeting to discuss IEEE's present and future. Our guest speaker will be Dr. John Vig, 2008 IEEE President-Elect.

About the Meeting

The talk will consist of two parts:

- 1) "the state of the IEEE," i.e., a report on how IEEE is doing with respect to membership, conferences, publications, standards, finances, and other activities; what the major threats and opportunities are, and
- 2) what 2009 President-elect Vig would like to accomplish during his term in 2009. He has a long "to-do" list. However, his term is only one year, and the president's powers are limited. Nevertheless, he will discuss what he wishes to improve in IEEE, and ask the audience's advice about the prioritization of his goals.

Bring your associates, friends and spouses.

About the Speaker

John Vig was born in Hungary and came to the United States in 1957, where he subsequently received the BS degree from the City College of New York and his PhD degree from Rutgers – The New Jersey State University.

He spent his professional career performing and leading R&D activities in Army research laboratories, where he developed high-stability resonators, oscillators, and sensors. He retired from

his Army position in 2006, after 36 years of service (as a civilian scientist).

He has been serving as a technical advisor to several DARPA program managers on programs ranging from micro- and nanoresonators to chip-scale atomic clocks and low-noise oscillators. He is currently working as a technical consultant with System Planning Corporation supporting selected DARPA program activities. He also serves on the Technical Advisory Board of a startup, SiTime Corp.

Dr. Vig is the author of more than 100 publications, including nine book chapters, and he holds 55 patents. He is an IEEE Fellow, and is the recipient of the IEEE Cady Award and the IEEE Sawyer Award. He has been the Distinguished Lecturer of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control (UFFC) Society, and he has served as the president of this Society. Dr. Vig founded the IEEE Sensors Council and has served on the IEEE Board of Directors for three years. In 2005, he was IEEE Vice President for Technical Activities. He is currently serving as the 2008 IEEE President-elect, i.e., he will be IEEE President in 2009.

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
www.ieeeusa.org/policy/care/
www.ieeeusa.org
www.programmersguild.org
<http://web.njit.edu/~ieeenj/>
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/.

Time: 6:30 PM to 9:00 PM, Wednesday, August 13, 2008. 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, Richard F. Tax, (201) 664-6954, rftax "AT" verizon.net.



Farmingdale
State College

LISAT2008

Fourth Annual IEEE Long Island Systems, Applications and Technology Conference

Friday, May 2, 2008

The Institute for Research & Technology Transfer at Farmingdale State College
State University of New York - Farmingdale, NY

Extended CALL FOR PAPERS, PRESENTATIONS and EXHIBITORS

Last year's successful conference featured contributed papers that were presented in three parallel professional tracks: Systems, Applications, and Technology with a fourth track consisting of Region 1 award-winning graduate student presentations and a 35 booth Exhibit Hall. Technical papers describing research development and application on a broad range of electronic and electrical engineering topics are now solicited for LISAT2008. **Applied research and practitioner submissions will also be considered. No formal paper is required for these submissions.**

The deadline for abstract submissions has been extended to Feb 22.

You will be notified of acceptance by Feb 29.

All papers being included in IEEE Xplore are due by March 24.

All Power Point presentations are due by April 14.

All submissions must include the author's full names, affiliations, mailing addresses, phone numbers, and email address. In addition, a 300-to-500 word abstract, a 1/3-page biography of the presenting author, and an outline of the conference presentation must be submitted. Submissions should be emailed to the LISAT Technical Program Co-Chairmen, Dave Mesecher at d.mesecher@ieee.org and Daniel Rogers at drogers@ieee.org, as well as Jesse Taub, Technical Program Consultant, at jjtaub@aol.com (Please copy David Weiss daweiss@ieee.org on all Alternate Energy themed papers.) For detailed instructions on submission, for manuscript and presentation templates, and for more information on the conference, go to the LISAT web site at <http://ewh.ieee.org/conf/lisat/>

Papers and presentations will be accepted based on their originality, content, clarity, and interest to IEEE members. At least one author of *each* paper/presentation must register for the Conference and will be expected to provide a 40-minute PowerPoint presentation at the conference followed by 10 minutes of Q&A. **The presenting author will be allowed to register at the discounted rate of \$75.** Presented papers will become part of the IEEE Xplore database. Selected papers will receive CEU credit and the Conference Proceedings on CD-ROM will be given to each attendee.

While LISAT welcomes a wide variety of papers in systems, applications and technology, some examples of topics of particular interest are: *Homeland Defense, Alternate Energy Sources, Green Building Technologies, Satellite Communications, Mobile Communications, RF ID Tag Technology, Microwave Technology, Electromagnetic Compatibility, Mobile Ad Hoc Networking, Multi-level Network Security, Sensor Fusion, New Electrical Power Sources, Antenna Systems and Processing, Radio Locationing, Radar Systems and Techniques, Wireless Technologies, Distributed Computing, and Medical Electronics*

For information on **Exhibiting** at LISAT, please contact: Dr. Fred Kruger at f.m.kruger@ieee.org

For all other information contact LISAT2008 Conference Chair: Dr. Charles Rubenstein at c.rubenstein@ieee.org or Conference Co-Chair: Dr. Babak Beheshti at b.beheshti@ieee.org, or go to <http://ewh.ieee.org/conf/lisat/>

LISAT is sponsored by the IEEE Long Island Section and its Technical Society Chapters and IEEE Region 1, in cooperation with the Institute for Research & Technology Transfer (IRTT) at Farmingdale State College (SUNY).

Releases and Approvals: This conference will be unclassified and attended by both US and non-US persons. It is the author's responsibility to obtain all required company and government releases and approvals prior to making a paper submission. A statement that such releases and approvals have been obtained as well as a completed IEEE copyright form (signed by the submitting author) must accompany the final manuscript of each accepted paper.

2008 REGION 1 GOLD CONFERENCE

Jointly held with IEEE Region 1 Student Conference
Hosted by Fairleigh Dickinson University IEEE Student Branch

Friday April 25th to Saturday April 26th, 2008

Friday, April 25th, 2008

⌚6:00pm - 9:00pm **Free Reception/Networking (and Hors D'oeuvres)**

Saturday, April 26th, 2008

⌚8:30am - 9:00am **Opening Remarks**

⌚9:00am - 1:00pm **Paper Contest**

⌚9:00am - 1:00pm **Micromouse Practice**

⌚9:00am - 1:00pm **Training Sessions**

- Introduction to SAC/GOLD/WIE
- Joint SAC/GOLD/WIE Training
- Separate SAC/GOLD/WIE Training

⌚10:00am - 4:00pm **Career Fair**

⌚1:15pm - 2:30pm **Trip to International Space Station by Dr Greg Olsen**

⌚2:45pm - 5:00pm **Paper Contest**

⌚2:45pm - 6:00pm **Micromouse Competition**

⌚2:45pm - 6:00pm **Leadership and Professional Development Speakers**

- See conference website for topics

⌚7:00pm - 9:00pm **Awards Dinner**

Conference Highlights:

- Career Fair
- Student Paper Contest
- Micromouse Competition
- GOLD Seminars
- GOLD/SAC/WIE Meetings
- Social and Networking Event
- Awards Dinner
- Resume Walk-in Clinic

Region 1 Demographics:

- About 41,300 IEEE Members
- About 2,600 GOLD Members
- About 3,100 Student Members
- 82 Schools

More information and on-line registration

<http://www.ewh.ieee.org/reg/1/gold/>

Location:

Fairleigh Dickinson University
1000 River Rd
Teaneck, NJ 07666

Teaneck Marriott at Glenpointe

100 Frank W Burr Boulevard
Teaneck, NJ 07666
Rate: \$119/night, up to 3 beds/room
Tel: (201) 836-0600

Conference Fees:

TBD (see website)

Contact:

Uri Moszkowicz
R1 GOLD Coordinator
PH: (508) 736-1926
E-Mail: uim@ieee.org





CAREER FAIR AT 2008 IEEE REGION 1 GOLD/SAC/WIE CONFERENCE

Jointly held with IEEE Region 1 Student Conference
Hosted by Fairleigh Dickinson University IEEE Student Branch

**April 26th, 2007
(Career Fair 10:00AM to 4:00PM)**

Companies participating at Career Fair will find a highly qualified audience (GOLD, Student, and Women in Engineering Members). Conference attendees are mostly student leaders and young professionals. Last year, the Region 1 Student Conference had about 150 student attendees.

Location:

Fitness Center
Fairleigh Dickinson University
1000 River Rd
Teaneck, NJ 07666

Conference Highlights:

- Career Fair
- Student Paper Contest
- Micromouse Competition
- GOLD Seminars
- GOLD/WIE Meetings
- Social and Networking Event
- Award and Dinner Banquet
- Resume Walk-in Clinic

Region 1 Demographics:

- About 41,300 IEEE Members
- About 2,600 GOLD Members
- About 3,100 Student Members
- 82 Schools

Contact:

Uri Moszkowicz
R1 GOLD Coordinator
PH: (508) 736-1926
E-Mail: uim@ieee.org

Register by April 7th, 2007

CAREER FAIR SPONSORSHIP PACKAGES

GOLD Package (\$995)

- ❖ Keynote speaker to Friday Reception or Saturday Dinner Banquet
- ❖ 4 tickets to Award Dinner Banquet
- ❖ 2 tables (6'x3' each) at Career Fair Venue
- ❖ Logo Displayed on all multimedia (websites, e-mail, flyers)
- ❖ 1 page in Career Fair Booklet
- ❖ 4 posts on IEEE Jobsite (worth \$210 / post) for 30 days
- ❖ E-mail all IEEE members about the company participation and profile
- ❖ Copy of Career Fair resume book

SILVER Package (\$495)

- ❖ 2 tickets to Award Dinner Banquet
- ❖ 1 table (6'x3' each) at Career Fair Venue
- ❖ Logo displayed on all multimedia (websites, e-mail, flyers)
- ❖ 1 page in Career Fair Booklet
- ❖ 2 posts on IEEE Jobsite (worth \$210 / post) for 30 days
- ❖ Copy of conference resume book

BOOTH Package (\$295)

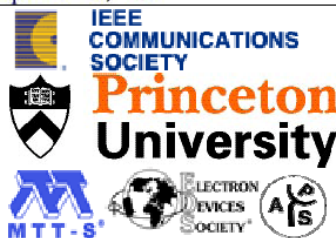
- ❖ 1 table (6'x3' each) at Career Fair Venue
- ❖ Company mentioned in Career Fair Booklet
- ❖ Copy of conference resume book

NOT ATTENDING Package (\$195)

- ❖ ½ table (3'x3') at Career Fair Venue displaying provided materials
- ❖ Staffed resume collection and forwarding
- ❖ Company mentioned in Career Fair Booklet
- ❖ Copy of conference resume book

2008 Sarnoff Symposium

April 28 – 30, 2008
 Princeton, NJ



Symposium Committee

Conference co-chair:

Durga Misra (NJIT)

Conference co-chair:

Mark Christenson (Sarnoff)

Technical Program co-chair:

Kyriakos Manousakis
 (Telcordia Applied Research)

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Maria Striki (Telcordia Applied
 Research)

Co-commercial Panel Chair:

Ajay Rajkumar (Alcatel-Lucent)

Webmaster:

Komlan Egoh (NJIT)

CALL FOR PARTICIPATION

Since 1978 the IEEE Sarnoff Symposium has been bringing together a tremendous and rich diversity of telecom experts from industry, universities, and government. The popularity of the Sarnoff Symposium, again being held in the historic Nassau Inn located in the heart of downtown Princeton, continues to grow as the premier forum for researchers, engineers, and business executives in the North East drawing an attendance from all over the world. Beside the technical paper presentations the Symposium will include tutorials, student paper poster presentations, executive panels, and exhibitions. The Symposium is soliciting state-of-the-art research papers and tutorial proposals in the following areas of interest:

Communication Systems

- Broadband Networks (LAN/WAN)
- Network Security
- VoIP & QoS (IPv6/Telephony)

Military Communications

- Disruption Tolerant Networks
- Trust, Security, and Privacy
- Power Management Issues

Multimedia Applications & Networking

- Multimedia Communications
- Optical Communications & Networking
- WDM Systems

Communications Theory

- Network Information Theory
- Signal Processing for Communications
- Modulations and Coding Techniques

RF and Microwave Techniques

- Power Amplifiers
- Microwave Devices
- Antenna Systems
- Transceiver Design
- Satellite Communication Systems

Wireless Communications

- WLAN, WiMAX, 3G and 4G Systems
- Multiple Antenna Systems (MIMO/Beamforming)
- Radio Resource Management and
- Interference Management
- Cross Layer Design
- Sensor, Mesh & Ad Hoc Networks
- Performance Analysis of Wireless Systems
- Ultrawideband (UWB) Communications

Prospective authors are encouraged to submit a FULL PAPER for review by December 21, 2007, in PDF format. Only original papers that have not been published or submitted for publication elsewhere will be considered. The submission process is carried through EDAS conference management system (<http://edas.info/>). The manuscripts must follow the IEEE two-column format with single-spaced, 10-point font in the text. The maximum paper length is of five (5) pages. A sixth page may be accepted after an additional fee. Submission of a regular paper implies that at least one of the authors will have a full registration to the Conference and present the paper upon the acceptance of the submission. All accepted papers (after review by experts in the field) will be presented in oral sessions, will be included in the 2007 IEEE Sarnoff Symposium proceedings, and will be published through IEEEExplore. Student papers should be submitted to the Student Papers Chair [cwang@devry.edu]. Prospective tutorial presenters should contact the Tutorials Chair [mstriki@research.telcordia.com]. For more information please visit the conference web page (see below).

IMPORTANT DATES

Papers Due:February 1, 2008
 Tutorial Proposals Due:.....February 1, 2008
 Student Papers Due:.....February 1, 2008
 Notification of Tutorials Acceptance:.....March 15, 2008
 Notification of Papers Acceptance:.....March 15, 2008
 Final Version Due:.....TBA

CONFERENCE SCHEDULE

Tutorials:.....April 28, 2008
 Paper Sessions:.....April 29, and April 30, 2008
 Exhibits:.....April 29, 2008

Web page: www.sarnoffsymposium.org, Email : sarnoff.symposium@ieee.org

IEEE AWARDS RECEPTION

*North Jersey Section
May 4, 2008
Birchwood Manor, Whippany NJ*

*A time to relax, unwind and enjoy --
A time to pay tribute to our new Fellows --
A time to honor our Award Winners --
YES it's time for the Annual Section Reception*

The Annual Section IEEE Awards Reception will be held at the Birchwood Manor, 111 North Jefferson Road, Whippany again this year. The affair is scheduled for **Sunday, May 4, 2008** from 3 to 6 PM. Tickets are \$35.00 each. Spouses and guests are welcome. We are limited to 90 attendees, so please make your reservations early.

Reservations are required by April 24, 2008. Complete the reservation form and return it with your payment. If you would like tickets mailed back to you, please enclose a self-addressed **stamped** envelope. Otherwise, your tickets will be held at the door for you. If any additional information is required concerning the reception, contact Anne Giedlinski at (973) 377-3175.

Use this form for Reception reservations. **ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE to receive tickets in advance. Reservations are required by April 24, 2008.**
Mail reservation request to:

Anne Giedlinski
299 Brooklake Road
Florham Park, NJ 07932

Enclosed is _____ for _____ ticket(s) at \$35.00 each (make check payable to **North Jersey Section IEEE**) for:

NAME: _____

ADDRESS: _____

☐ Yes, please send me directions to the Birchwood Manor

NJ Power Engineering Society/Industry Applications Society

Harmonics Seminar

The PES and IAS Chapters will sponsor a technical seminar on the topic of harmonics. The session will be held on Friday, April 25, 2008, at PSE&G's Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ.

Topics

Power System Harmonics: A Practical Perspective

- ✓ Harmonic symptoms, sources and solutions – an overview of harmonics
- ✓ Testing harmonic solutions – a side-by-side comparison
- ✓ IEEE Std 519 considerations
- ✓ Harmonic resonance and solutions
- ✓ Energy savings and harmonics – what is real
- ✓ Case Studies – harmonic issues alive and well

About the Instructor

The instructor will be Daniel J. Carnovale from Eaton. Dan is the Power Quality Solutions Manager for Eaton's Electrical Group. Dan has developed Eaton's Power Quality Experience Center and Lab where PQ problems are created and mitigated for demonstration and testing purposes. He has developed and teaches CEU certified, technical seminars on Power Systems and Power System Analysis and he has conducted several hundred Power Quality site investigations for commercial, industrial and utility power systems: evaluating PQ issues and applying solutions.

Prior to Eaton, Dan worked for Westinghouse Engineering Services and ABB Power T&D where he performed Power Quality field investigations and electrical distribution system analysis.

Dan received his BS Degree in Electrical Engineering from Gannon University in Erie, PA, his MS Degree in Power Systems from Rensselaer Polytechnic University in Troy, NY and an MBA from Robert Morris University in Pittsburgh, PA. He is a registered Professional Engineer in the states of Pennsylvania, California and Alaska, a Certified Energy Manager (CEM) and a Senior Member of IEEE. He has published many technical papers and presented more than 100 seminars on Power Quality and harmonics.

The registration fee for this seminar prior to April 11th 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 April 11th must include an additional late fee of \$25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

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

Time: 9:00 AM to 2:00 PM (lunch is included), Friday, April 25, 2008.
Place: PSE&G - Hadley Road Facility, 4000 Hadley Road, South Plainfield, NJ 07080-1192
Directions: Route 287 to Exit 5
If Southbound make right onto Stelton Road; If Northbound make left onto Stelton Road
Make first left onto Hadley Road
Pass the two lights and building is on the left; look for PSE&G sign on left
Information: Ronald W. Quade, PE, (732) 205-2614 or rwquade "AT" ieee.org

Registration: Harmonics Seminar 4/25/2008

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

Name _____

Address _____

Phone _____ Email _____

IEEE # _____ Student @ _____ Non IEEE _____ Life Member _____

Continuing Education Units: _____ Yes \$25 _____ No

If CEUs are chosen, please include a \$25 processing fee

Payment Enclosed \$ _____ Add \$25 late registration after April 11, 2008

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