



IEEE Pittsburgh Section
Bulletin



September 2006 Volume 55, No. 9



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- Electricity Class for Kids

Editor of this issue: Jace Cochrane, P.E. jacejc@pghmail.com (412) 390-0718

Contributors: Phil Cox, Bob Grimes, Ganping Ju, Joe Kalasky, Heung-No Lee, Mike Oliver, Kal Sen, Chuck Urso and Dave Vaglia.

All announcements for publication in a particular month's bulletin are due to the Editor by the 20th of the previous month. The accuracy of the published material is not guaranteed. If there is any error, please bring it to the Editor's attention.

The Section's web site www.ewh.ieee.org/r2/pittsburgh has past issues of the bulletin and lots of other useful information.

• *From the Chair*

Members of IEEE Pittsburgh Section,

Last month I told you of our section's outstanding accomplishment, being chosen the Best Large Section in Region 2 in 2005. Winning the Region 2 award put us into consideration for a higher level award. IEEE has more than 330,000 members and 300 regional sections worldwide. The Pittsburgh Section was chosen to receive the 2005 Regional Activities Board Outstanding Large Section Award. Our section of about 2400 members was chosen as being the most successful in fulfilling IEEE goals for our members. See page 12 for the announcement letter.

My thanks go to all the members who volunteered and/or participated in our events in 2005 and made this award possible. Your fine efforts, teamwork, dedication, and skill have resulted in this success. I appreciate this outstanding volunteer effort and offer congratulations to all contributors. Again, special thanks go to Kal Sen for his hard work as Chair in 2005 and for preparing our application for this award.

Looking to the future, we have been calling for nominations for the elected offices for 2007. At our August meeting, the Executive Committee approved a slate of candidates for this election: Chair-Ralph Sprang; Vice Chair-John Twigg; Treasurer-Harold Hagerty; Secretary-Joe Cioletti. Additional candidates can be nominated by petition. For more information, please contact me at davevaglia@ieee.org or (412) 491-6944.

Join us at our fall social event and celebrate our section's success. We're going on a Gateway Clipper Captain's Dinner Dance Cruise on Saturday, September 30. See page 7 for more details.

I urge more members to come forward and take part in shaping the future of the Pittsburgh Section. We need new volunteers with fresh ideas. Become active!

Dave Vaglia

Section

Chair & Awards Co-Chair – David J. Vaglia, P.E.
davevaglia@ieee.org (412) 491-6944

Vice Chair – John Twigg
jtwwg@ascent-systems.com (412) 795-4444

Secretary – Charles Urso, P.E.
cursos@ieee.org (412) 338-4871

Treasurer – Harold Hagerty, P.E.
hhagerty@ieee.org (412) 492-0943x226

Webmaster – Andrew Novotny
andrewnovotny@ieee.org (412) 351-4954

Immediate Past Chair – Dr. Kalyan Sen (Kal)
senkk@ieee.org (724) 696-1611

UpperMon Subsection
Chair: Dr. Dimitris Korakakis
Dimitris.Korakakis@mail.wvu.edu
(304) 293-0405 x2512

Chapters

Communications Society
Chair: Phil Cox
p.e.cox@ieee.org (724) 443-0566

Computer Society – Chair: John Twigg (see above)

Engineering In Medicine & Biology Society
Co-Chair: Bob Brooks
rbrooks@medrad.com (412) 767-2400 x3506
Co-Chair: Dr. Zhi-Hong Mao
maozh@engr.pitt.edu (412) 624-9674

Electromagnetic Compatibility Society
Chair: Michael J. Oliver
emi@mair.com (814) 763-3211

Power Engineering & Industry Applications Societies
Chair: Charles Urso, P.E. (see above)
Vice Chair: Andrew Novotny (see above)

Magnetics Society – Chair: Dr. Ganping Ju
Ganping.Ju@Seagate.com (412) 918-7046

Robotics Society – Chair: Dr. Guy Nicoletti
Nicoletti+@pitt.edu (724) 836-9922

Signal Processing Society – Chair: Dr. Heung-No Lee
hnlee@engr.pitt.edu (412) 624-9677

Affinity Groups

GOLD – Chair: Andrew Rydholm
andrew_rydholm@yahoo.com (412) 261-3200 x281

Life Member – Chair: Bob Grimes, P.E.
r.d.grimes@ieee.org (412) 963-9711

Committees

Consultants Network
Co-Chair: Dr. George Crawford, P.E.
gwc2@psu.edu (412) 675-9164
Co-Chair: Peter Mantzouridis
Coolpetros1@yahoo.com (412) 780-0201

Professional/Career Activities (PACE)
Chair: Joe Kalasky, P.E.
j.kalasky@ieee.org (724) 838-6492

Student Activities – Chair: Ralph Sprang
rsprang@ieee.org

Membership Development
Chair: Dr. Karl F. Muller, P.E.
karlmuller@compuserve.com (412) 374-6051

Awards – Co-Chair: Ray Valentine, P.E.
r.d.valentine@ieee.org (724) 733-5083

Publicity – Chair: Thomas Dionise, P.E.
ThomasJDionise@eaton.com (724) 779-5864

- ***Maxwell's Equations and Entrepreneurship - How I Went to Wall Street to Make a Business out of Field Theory***

Speaker: Dr. Zoltan Cendes, founder of Ansoft Corporation
Date: Thursday, September 14, 2006
Time: 4:00 PM *Note that this is later than our usual time to accommodate our speaker's schedule.*
Place: George Westinghouse Technical Center, Churchill Building 801, Room 2C14
This is the same room as used for past Life Member meetings, located off the second corridor halfway between the lobby and the cafeteria.
Sponsor: Life Member Chapter
Questions: Contact Bob Grimes at r.d.grimes@ieee.org.



Dr. Zoltan Cendes is Founder and Chairman of Ansoft Corporation. He also serves as Ansoft's Chief Technology Officer and is responsible for managing the company's research and development. In this role, he sets the overall direction of Ansoft's technology and products. Dr. Cendes has made significant contributions in the area of finite element modeling of electromagnetic devices. He is a Fellow of the IEEE, is on the editorial board of IEEE Spectrum, and is an IEEE AP-S Distinguished Lecturer. In 1982, he joined the faculty of Electrical and Computer Engineering at Carnegie Mellon University where he was Professor until 1996. Since that time he has been an

adjunct Professor at Carnegie Mellon.

Directions:

The George Westinghouse Technical Center is easily accessed right at Exit 10A of the Parkway East (Interstate 376) in Churchill Borough. The guard at the gate can direct you to the meeting room and parking.

- ***Webmaster Help Needed***

Our webmaster, Andy Novotny, is maintaining both our section web site and our award-winning PES Chapter web site. He welcomes assistance from veteran or beginning webmasters. Contact Andy at andrewnovotny@ieee.org or (412) 351-4954 to learn more.

- ***New Senior Member***

Congratulations to our member **Robert Sobek**, who was promoted to Senior Member of IEEE in August 2006. He's a member of IEEE's Signal Processing Society.

- ***Interested in the Industrial Electronics Society?***

Are you a member of IEEE's Industrial Electronics Society (IES)? Would you like to get more for your dues? Would you like more technical meetings in Pittsburgh related to industrial electronics? Are you interested in starting a chapter of the IES in Pittsburgh? Please contact Dave Vaglia at davevaglia@ieee.org or Chuck Urso at cURSO@ieee.org with your suggestions.

- ***The New Electromagnetic Compatibility Directive: 2004/108/EC
Are You Ready?***

Speaker: Gary Fenical, NARTE Certified EMC Engineer, Laird Technologies
Date: Wednesday, September 20, 2006
Time: 6:30 PM Reception 7:00 PM Presentation
Place: Westinghouse Energy Center, Monroeville Directions on page 10.
Cost: No charge
Sponsor: EMCS Chapter
RSVP: **Required** to Mike Oliver at emi@majr.com or (814) 763-3211

Abstract: The European Parliament and the Council of the European Union have adopted the new EMC Directive 2004/108/EC. Effective July 20, 2007, the current EMC Directive 89/336/EEC will be repealed. There is a transitional period until July 20, 2009, at which time apparatus compliant to 89/336/EEC can no longer be sold in the European Market. The goal of this presentation is to discuss the changes in the Directive that will affect your products going to the European Economic Community (EEC) market. Don't wait until the last minute to deal with the changes that have been mandated. Now is the time to become familiar with the new Directive and its implications for your manufacturing process and products. There are likely to be major changes in your documentation, especially documentation for ISO 9000.

Generally the intent of the EMC Directive has not changed. The essential requirements and the protection requirements are essentially the same with slightly different wording. The scope is better defined, and there are new definitions. Competent Bodies have been eliminated the Directive specifies the requirements for Notified Bodies. The elimination of mandatory third party assessment of TCFs will affect many manufacturers, for example, those who manufacture many different models, apparatus that did not have harmonized standards, large installations that could not be tested to the harmonized standards, and apparatus for which only harmonized standards existed. Many member states of the European Union are discussing increasing market surveillance and enforcement of the new directive.

About the speaker: Gary Fenical is the EMC Technical Sales Representative at Laird Technologies in Delaware Water Gap, PA and has been with the firm for 23 years. He is a specialist in RF shielded enclosures and has been responsible for the design and/or measurement and quality control of hundreds of large-scale shielded enclosures as well as a number of shielded equipment cabinets and housings. He was instrumental in the design and construction of Laird Technologies' state-of-the-art World Compliance Centers. He has over 40 years of experience in the operation and maintenance of RF and digital systems for both military and commercial applications. His experience covers classified RADAR systems, analog and digital computers, electronic and hard copy readouts, and both secure telecommunications and computer network systems.

Mr. Fenical has authored many articles on EMC requirements for medical devices, mutual recognition agreements, and guidelines to meet the essential requirements of the EMC Directive. He has also authored several seminars which have been presented worldwide. He holds the patent for heat-treated beryllium-copper knitted wire mesh gasket. He is a special government employee for the FDA as an EMC consultant and Chair of the SAE AE-4 Committee on Aerospace EMC.

- ***Verizon FiOS - Building the Next Generation Residential Pipe for Voice, Video and Data Convergence and Beyond***

Speaker: William Garrett, Director, Mass Market Innovation, Verizon Labs
Date: Wednesday, September 20, 2006
Time: 1:00 PM-3:00 PM Presentation followed by refreshments and networking
Place: Room 405 School of Information Science Building University of Pittsburgh
Oakland Campus 135 N Bellefield Ave Pittsburgh PA 15213
Cost: No charge
Sponsor: Communications Society Chapter and Pitt's School of Information Science
Questions: Phil Cox at p.e.cox@ieee.org or (724) 443-0566

Abstract: Verizon's FiOS deployment represents the first wide scale deployment of fiber to individual premises in the US. In addition to data service up to, and soon in excess of, 100Mbps, FiOS also uses Passive Optical Networking (PON) technology which adds additional wavelengths for delivering other services, in Verizon's case, broadcast video. In this talk we will look at the service and business drivers behind deploying FiOS and provide a technical overview of Verizon's overall Next Generation IP network initiatives and the PON technology that FiOS is based on. Also we'll examine how Verizon's FiOS TV compares to more traditional IPTV systems, and finally compare FiOS to other network initiatives such as Fiber to the Node.

About the speaker: Bill Garrett has been the Director of Mass Market Innovation since May 2006. His group is responsible for working internally and with the external vendor and technology community to define and develop innovative services, ideas and technologies for deployment by Verizon. Prior to his current position, Garrett spent four years as Director of Broadband Services, where he was responsible for defining, developing and deploying advanced communications, video and data services targeted at Verizon's DLS and FTTP customers. Earlier Garrett was a member of the technical staff in the Verizon Technology Organization where he participated in the teams responsible for architecting Verizon's Next Generation IP Networks and developing the network infrastructure needed to support new services deployment. Prior to that, Garrett was a Principal Investigator for Next Generation Application Technologies at GTE Laboratories. There he was responsible for developing GTE's first deployed IP-based services with Genuity and for evaluating and recommending new technologies for use in GTE's network and IT operations. Garrett received his Master of Science degree in Computer Science from the University of Rochester in 1992.

- ***IEEE Elections***

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Use your IEEE ballot due soon in the mail.

Kindly vote for **Joe Lillie**
IEEE-USA President Elect 2007

Visit <http://ieee.joelillie.com>

William P. Walsh
Region 2 Director Elect Candidate

Region 2 experience: Industry Relations, Membership, and Professional Activities. As Director would improve member benefits, address education at all levels, and partner with industry of our Eastern US Region.

- ***Ubiquitous Multimedia Computing and Communication:
Challenges and Future Trends***

Speaker: Professor C. C. Jay Kuo, University of Southern California
IEEE Signal Processing Society Distinguished Lecturer
Date: Wednesday, September 27, 2006
Time: Noon – 1:30 PM
Place: 424 Benedum Hall, University of Pittsburgh, Oakland Campus
Cost: No charge
Sponsor: Signal Processing Society Chapter
Questions: Heung-No Lee, PhD at hnlee@engr.pitt.edu or (412) 624-9677

Abstract: With the recent flourishing of embedded media applications such as MPEG-2, H.264, and VC-1 encoders/decoders and wireless broadband communication infrastructures such as 3G, WiMax and Wi-Fi, real-time multimedia computing and communications on embedded systems becomes a major focus for both software and hardware designers. In the first part of the talk, the tradeoff between several design choices is analyzed, including the RISC processor, the SIMD processor and the dedicated ASIC. Then in the second half of the talk, three emerging R&D efforts will be highlighted. First the design of a multi-format video codec to strike a balance between flexibility and performance is addressed. This is motivated by the observation that there are multiple audio/video compression formats to be adopted currently. The trend of embedded processors is to support a wide range of audio/video formats such as MPEG-2, H.264 and VC-1. The design of multi-format codec demands a careful architecture consideration. Second we consider the design of low-complexity integrated encryption and compression speech/video coding algorithms, which can significantly lower the power consumption of mobile terminals for digital rights management (DRM). This gives an example of lower power design from an algorithmic level. Third, the rate-distortion-complexity (RDC) optimized video coding techniques are discussed. We emphasize a concept called “decoding-friendly encoder design”, where many computationally heavy operations can be saved at the decoder end while high visual quality is preserved.

About the speaker: Dr. Kuo received his PhD degree from MIT in 1987. He is now a Professor of EE, CS, and Mathematics at USC. His research interests are digital media processing, multimedia compression, communication and networking technologies, and embedded multimedia system design. He is a Fellow of IEEE and SPIE. He received the National Science Foundation Young Investigator Award in 1992 and Presidential Faculty Fellow Award in 1993. Currently his research group at USC involves 40 PhD students, which is one of the largest academic research groups in multimedia technologies. (See web site <http://viola.usc.edu>.) He is co-author of about 800 technical publications for international conferences and journals as well as seven books. Dr. Kuo is Editor-in-Chief for the *Journal of Visual Communication and Image Representation* and Editor for the *Journal of Information Science and Engineering* and the *RURASIP Journal of Applied Signal Processing*. He was on the Editorial Board of the *IEEE Signal Processing Magazine*.

- ***Challenges of the Modern Transmission Grid***

Speaker: From PJM-West
 Date: Wednesday, September 27, 2006
 Time: 6:30 PM Pizza and pop 7:00 PM Presentation
 Place: Westinghouse Energy Center, Monroeville Directions on page
 Cost: No charge
 Sponsor: PES/IAS Chapter
RSVP: **Required** to Chuck Baker at bakercf@westinghouse.com

PJM started as a power pool for eastern Pennsylvania, New Jersey, and Maryland utilities in the late 1970's. In today's world of competitive electricity generation, PJM is a Regional Transmission Organization (RTO) responsible for maintaining the reliability of a transmission grid that covers all or part of 13 states and the District of Columbia. It operates the largest competitive wholesale electricity market in the world. It also does transmission expansion planning. PJM's headquarters is in the Philadelphia area and a branch office, PJM-West, has been established locally. Come and learn about the latest set of challenges faced by the RTO for our region.



- ***Gateway Clipper Captain's Dinner Dance Cruise***

Invited: All Pittsburgh Section members and their guests at least 21 years of age
 Date: Saturday, September 30, 2006 *Note change in date from August bulletin.*
 Time: 5:30PM Board ship 6:30 PM Depart dock 9:00 PM Return to dock
 Place: Depart from Station Square on Carson Street, Pittsburgh
 Cost: \$25 per person. Each section member may bring one guest.
 Sponsor: IEEE Pittsburgh Section
RSVP: **Required by Sept 17.** RSVP by emailing your name, email address, and the number of tickets desired (max = 2) to Harry Hagerty at hhagerty@ieee.org. Also mail your check for \$25 per ticket, payable to 'IEEE Pittsburgh Section' to:
 H. Hagerty
 250 Overton St
 Pittsburgh PA 15221

Join your fellow IEEE Pittsburgh Section members for an evening dinner cruise featuring a buffet dinner, live band, and dancing. We will board at 5:30 PM, depart for the cruise on our three rivers at 6:30 PM, and be back at the dock by 9:00 PM. The ticket price includes dinner and dancing, and there will be a cash bar for drinks. No one under 21 may board the ship. More information can be found at www.gatewayclipper.com.

• *Spin Electronics*

Speaker: IEEE Magnetics Society Distinguished Lecturer
Professor Michael Coey, Trinity College, Dublin, Ireland

Date: Thursday, September 28, 2006

Time: Noon: Social with luncheon 12:30 PM Technical Program

Place: Seagate Research Center, Auditorium
1251 Waterfront Place In the Strip District near the Heinz History Center. From Smallman St turn onto 13th Street toward the Allegheny River.

Sponsor: Magnetics Society Chapter

RSVP: **Required** for luncheon to Ganping Ju at Ganping.Ju@Seagate.com

Abstract: Conventional electronics has ignored the spin on the electron. Besides its fundamental unit charge, the electron has a magnetic moment due to its quantum of angular momentum. Things began to change in 1988 with the discovery of giant magnetoresistance in metallic thin film stacks. This led to the development of spin valves and magnetic tunnel junctions, which allowed magnetic recording to ride the tiger of 100% year-on-year growth of recording density for the past ten years. Tunnel junctions are the active elements for most schemes for nonvolatile magnetic random-access memory, which will be briefly surveyed.

These devices, which underpin the multi-billion dollar magnetic recording industry, are nothing more than sophisticated magnetoresistors, the simplest two-terminal electronic device. If we are to see a second generation of spin electronics, it will be necessary to develop more complex devices such as a three-terminal spin transistor with gain. Here magnetic semiconductors are required, or at least the ability to manipulate spin-polarized currents in normal semiconductors. The puzzling new family of dilute magnetic oxides, such as ZnO:Co or SnO₂:Mn, and the emerging class of d⁰ ferromagnets such as HfO₂ or CaB₆ may produce a new paradigm for magnetism in solids, and support entirely new device concepts. A major challenge is to separate spin and charge currents in solids and transmit information magnetically without dissipation.



About the speaker: Michael Coey received a BA degree in physics from Cambridge University in 1966 and a PhD from the University of Manitoba in 1971. He worked as a researcher in the Centre National de la Recherche Scientifique in the 1970s, before moving to Trinity College, Dublin, where he has been Professor of Experimental Physics since 1986. Michael Coey has broad interests in magnetism, spanning materials hard and soft, crystalline and amorphous, metallic, semiconducting and insulating, as well as magnetic phenomena and devices. He coordinated the ‘Concerted European Action on Magnets’ (1984-94), a pioneering group of academic and industrial researchers devoted to all aspect of the understanding, development and

application of rare-earth iron permanent magnets. More recently, he led the Oxide Spin Electronics Network, OXSEN 1996-2000. Currently he is Deputy Director of Ireland’s nanoscience centre CRANN. He serves as Divisional Associate Editor of *Physical Review Letters* and on the editorial board of the *Journal of Magnetism* and *Magnetic Materials*. His main research interests at present are in spin electronics, including magnetic semiconductors, as well as magnetotransport and magnetoelectrochemistry. He has published more than 500 papers.

• *Heat Assisted Magnetic Recording*

Speaker: Michael Seigler, PhD, Seagate Technology
Date: Wednesday, October 11, 2006
Time: 6:15 PM – 8:30PM
Place: Seagate Research Center 1251 Waterfront Drive in the Strip District of Pittsburgh. Located near the Heinz History Center and the Convention Center. From Smallman Street turn onto 13th Street toward the Allegheny River.
Cost: \$7 for dinner including pizza, pop, and dessert.
Sponsors: Magnetics Society Chapter and Optical Society of America
RSVP: **Required** by October 1 to dhoffmann@eoc.psu.edu. Please indicate if you will be having dinner.

This is a joint meeting with the Optical Society of America. The meeting's theme is Optical Research at Seagate, and it will include a tour of Seagate's facilities.

• *Testing for EMC Compliance: Approaches and Techniques*

Speaker: Ed Nakauchi, Emulex Corporation
Date: Thursday, October 12, 2006
Time: 6:30 PM Reception 7:00 PM Presentation
Place: Westinghouse Energy Center, Monroeville Directions on page
Cost: No charge
Sponsor: Electromagnetic Compatibility Society Chapter
RSVP: **Required** to Mike Oliver at emi@majr.com

Abstract: This presentation is based upon the book of the same name, which was co-authored by our speaker. It discusses what to do if your product does fail EMC testing. Few books describe a process for dealing with this problem. The talk will review the fundamental cause of EMI and then will show a logical step-by-step approach to solve the problem. It will cover what questions to ask, what can be done, and what tools might make it easier.

About the speaker: Mr Nakauchi currently works for Emulex Corporation as an EMC consultant. He has over 30 years experience beginning with analog, power, and digital design. For the last twenty years, he has spent a majority of his time in the EMI/EMC/EMP and ESD areas for both military/aerospace companies and commercial audio/computer/medical companies.

More details will be in the October bulletin.

• *Toward the Creation of the Humanoid*

Speaker: Dr. Guy Nicoletti, University of Pittsburgh
Date: Thursday, October 19, 2006
Time: 12:30 PM
Place: University of Pittsburgh, Greensburg Campus
Sponsor: Life Member Chapter

More details will be provided in the October bulletin.

- ***The PE Electrical Exam Review Course***

As a service to our community, the IEEE Pittsburgh PES/IAS Chapters plan to sponsor a 24-week (72-hour) long PE Review Course on Wednesdays (6:00-9:00 PM) starting on November 1, 2006 and ending on April 18, 2007. The trainees will be prepared to take the PE Electrical Exam in April 2007. To become a PE one must pass two exams: Fundamentals of Engineering (FE) Exam – referred to as the EIT Exam and Principles and Practice of Engineering (P&P) Exam – referred to as the PE Exam. Joe M. DeSalvo, P.E., who has been teaching Penn State Continuing Education classes for over 40 years, will teach this course. This type of course normally costs over \$1200 per person. Because IEEE Pittsburgh PES/IAS will be responsible for the publicity, securing the participants, and obtaining the classroom facilities, we can project that the cost will be \$750 per person (IEEE member or non-member) if we have at least 25 participants. This cost includes course materials: four (4) textbooks and handouts with instructor's notes, problems, and sample exams. The classes will be held at Westinghouse Energy Center in Monroeville. Directions are below. Please indicate your interest by notifying Dr. Kal Sen at senkk@ieee.org or (724) 696-1611.

About the speaker:



Joe DeSalvo is a Professional Engineer with degrees in electrical engineering (Pitt) and industrial management (Carnegie Mellon). He is a Senior Life Member of the IEEE and is presently on the adjunct faculty of Pennsylvania State University where he teaches FE (EIT) and P&P (PE) review courses and several engineering and economics courses in the Advanced Power Engineering Program. Mr. DeSalvo is retired from Allegheny Power, where as Manager of Substation and Methods Standards, he had responsibility for substation designs and industrial engineering studies for three operating companies serving five states. He has served the IEEE in over 70 positions at all levels during the last 40 years. He was Chairman of the Pittsburgh PES Chapter in 1975-76

when it received the “Outstanding PES Chapter” award. He is a past Chair of the Pittsburgh Section and a past Director of Region 2. He received the IEEE Centennial Medal of Honor in 1984. In addition to IEEE activities, Mr. DeSalvo is a senior member of the Institute of Industrial Engineers and a member of Eta Kappa Nu and Sigma Tau honorary societies.

- ***Directions to the Westinghouse Energy Center***

From Pittsburgh take Interstate 376 East (Parkway East). Take Exit 14A to Monroeville and Rt 48 South. Cross Business Rt 22 at the traffic light and proceed to Rt 48 South (Moss Side Blvd) approx ½ mile (2 traffic lights). The 2nd traffic light is at a 4-way intersection with an Exxon Station on the right. Turn left at this intersection onto Northern Pike. Proceed approx 0.2 miles and turn right at the 1st traffic light onto Westinghouse Dr. Travel 0.7 miles (past the guard bldg) to the 3 flags where the building's main entrance is located. Parking in the evening will be plentiful. Use the main entrance and check with the security guards inside. You will be directed to the proper room for your meeting.

From the PA Turnpike, take Exit 57 (Monroeville). After the toll plaza, get in the left lane to get on Business Rt 22 West. At the first light, turn left onto Rt 48 South (Moss Side Blvd) and follow the above directions.

- ***Substation Integration and Automation Tutorial***

Instructor: John D. McDonald, P.E., IEEE Fellow
IEEE Power Engineering Society President
Vice President, Automation – Power System Automation, KEMA, Inc.

Date: Saturday, November 4, 2006

Time: Registration: 7:30 AM, Class: 8:00 AM – 5:00 PM

Place: Westinghouse Energy Center, Monroeville Directions on page 10.

Sponsor: PES/IAS Chapter

Cost: IEEE Member \$25; Non-member \$30. Certified Continuing Education Units are available for an IEEE processing fee of \$15. Lunch is provided.

RSVP: Register for the class **by Friday, October 27, 2006** by sending your check, payable to 'IEEE Pittsburgh Section' to Mey Sen, 126 Pauline Drive, Monroeville, PA 15146. Questions? Call Kal Sen at (724) 696-1611.

Abstract: The purpose of this course is to familiarize participants with all aspects of substation automation, from the components and integration architecture alternatives in the substation, to the utility enterprise (beyond the substation) for managing and leveraging the substation data to maximize its use. The term Intelligent Electronic Device (IED) is defined, and the different levels of substation integration and automation are discussed. The components of the integration and automation architecture are covered with respect to their technical issues. The reasons a utility would need substation automation are presented, and the methodology to build the business case for substation automation is given, including a sample case study. The characteristics and interface issues associated with Intelligent Electronic Devices (IEDs) are addressed, since the integration architecture is only as good as the integration capabilities of the IEDs themselves. This tutorial also covers the sensitive, controversial issues that need to be addressed by a utility when implementing substation automation. Five different general vendor approaches to substation integration and automation are contrasted, providing tremendous insight into the decisions vendors have made in developing their products. The various industry groups writing standards in substation automation are discussed. Lastly, copies of related technical papers and articles are provided to the participants along with copies of the PowerPoint slides.

About the speaker:



John D. McDonald, P.E., is Vice President, Automation for Power System Automation for KEMA, Inc. In his 32 years of experience in the electric utility industry, John has developed power application software for both Supervisory Control and Data Acquisition (SCADA)/Energy Management System (EMS) and SCADA/Distribution Management System (DMS) applications, developed distribution automation and load management systems, managed SCADA/EMS and SCADA/DMS projects, and assisted Intelligent Electronic Device (IED) suppliers in the automation of their IEDs. John is currently assisting electric utilities in substation automation, SCADA/DMS/EMS systems, and communication protocols.

John received his B.S.E.E. and M.S.E.E. (Power Engineering) degrees from Purdue University, and an M.B.A. (Finance) degree from the University of California-Berkeley. John teaches a SCADA/EMS course at the Georgia Institute of Technology and a SCADA/Substation Automation course at Iowa State University and is an IEEE PES Distinguished Lecturer.



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Email regional.activities@ieee.org

25 July 2006

David J. Vaglia
147 Jefferson Drive
Pittsburgh, PA 15228

Dear David:

On behalf of the IEEE Regional Activities Board (RAB) I am pleased to formally advise you that the **IEEE Pittsburgh Section** has been selected as a recipient of the 2005 Regional Activities Board Outstanding Large Section Award. The Section was selected for this award on behalf of your activities for the 2005 calendar year. The selection was approved, by acclamation, by the Regional Activities Board during its 23 June 2006 meeting.

The Regional Activities Board is pleased to honor the IEEE Pittsburgh Section for their outstanding support to IEEE and Region 2. This award consists of a plaque, which carries the following citation:

“For successful efforts in fulfilling IEEE’s educational and scientific goals for the benefit of the public by maintaining, enhancing and supporting the Student Branches, Technical Chapters and Affinity Groups for the IEEE Pittsburgh Section in Region 2.”

The IEEE Regional Activities staff will work with the Region 2 Director to have the plaque presented at an appropriate Regional event.

On behalf of the entire IEEE Regional Activities Board, please convey our congratulations to the IEEE Pittsburgh Section for having achieved this honor.

Sincerely,

Pedro Ray
Chair, IEEE Regional Activities Board
Vice President, IEEE Regional Activities

cc: Thomas Tullia, Region 2 Director
Dan Repperger, Region 2 Awards Chair
Duncan Baker, Chair, RAB Awards & Recognition Committee
Cecelia Jankowski, Managing Director, Regional Activities

Regional Activities • 445 Hoes Lane Piscataway, NJ 08854, USA • www.ieee.org

2006 Calendar – Meetings of IEEE Pittsburgh Section

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Executive Committee	19 Point Park	16 Point Park	16 U Pitt Greensburg	27 Point Park	18 Panera Monroeville	15 Panera Oakland	20 Panera Oakland	24 Panera Oakland	21 Panera Oakland			
Section		18 Engr Wk table	31 Science Fair	20 History Dinner			19 Improving State of Engring in USA		30 Dinner Gateway Clipper			
Communications		24 Random coding bounds							20 Verizon FiOS			
Computer	18 Tour SunGard	18 Robot Race	29 Applictn Moderniz	19 <u>Outsourcing America</u>	17 Vision 20/10	21 Vision 20/10	19 Improving State of Engring in USA					
EMBS		15 Transm data: body as cable										
EMCS	31 FAQs	1 Path of Least Induc & EMF phobia			11 EMC overview				20 New EU EMC Directive	12 Testing for EMC Compliance		
PES/IAS	25 P.E. License	13 Power Quality	25 Grounding & Bonding course	6 CMU MBA program 20 History Dinner 26 FE review class starts	31 HV ckt brkr design 3, 10, 17, 24, & 31 FE review class	14 & 21 2005 NEC course 28 Inverters & motor insulation 7, 14, 21, 28 FE review class	12 Roller coasters 5, 12, 19 & 26 FE review class	11 Pirate game 2, 9, 16, 23 & 30 FE review class	6, 13, 20 & 27 FE review class 7 AdCom mtg 27 PJM-West	4, 11 & 18 FE review class	1, 8, 15, 22 & 29 PE Prep class 4 Substation Automation class	6, 13 & 20 PE Prep class
Magnetics				28 Beyond mag record limits					28 Spin Electronics	11 Optics & Heat Assist Recording		
Robotics			16 Next level									
Signal Processing	9 Sensor network		22 Temporal role-based access control	12 Gene regulatory networks					27 Multi-media Computing & Commun.			

2006 Calendar – Meetings of IEEE Pittsburgh Section (continued)

	Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct	Nov	Dec
Upper Mon		6 Interconn to Backplane 13 Fingerprint please 20 Magnet Resonance Microscopy										
Consultants Network	24 Expand business	28 Business Meeting	28	25 Neural Networks	23 Legal questions	27						
Life Member				11 Intellectual property					14 Ansoft business & technology	19 Humanoids		
GOLD				18 Engrs as attorneys				8 Govt activities				
PACE				18 Engrs as attorneys				8 Govt activities				
Student Activities												

- ***G. WHISS Electricity Course***

Parents and grandparents: If you have difficulty teaching your 12-15 year-old the basics of ELECTRICITY to begin their preparation for a career in computers or electronics, then register them now for the G. Whiss (George Westinghouse Honors Institute Saturday Series) Electricity Course. It will be held

September 16, 23, 30, and October 7, 2006 10:00 AM to 12:30 PM

Students are expected to attend all four classes. Electrical device demonstrations, classroom instruction, a motor-building project, and focused tours of the George Westinghouse Museum combine to create a practical understanding of electricity and its many applications. The cost is \$45 per student which covers room rental and the cost of materials for the entire course. The classes will be held in the Westinghouse Castle in Wilmerding PA. See www.georgewestinghouse.com for directions.

Applications will be accepted on a first come, first served basis. Parents can register their child by sending the following information: child's name, age, parent's name, phone number and email address, address, name of child's school and a check for \$45 to Jim Sutherland, 206 Newbury Dr, Monroeville, PA 15146. Jim's phone number is (412) 856-1480.

(This is not an IEEE program; it is sponsored by Jim Sutherland and the George Westinghouse Museum Foundation.)