Pittsburgh Section

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From the Chair

I am delighted to report that our PES chapter has been selected as the recipient of the 2004 Outstanding Large Chapter Award. The IEEE PES has 172 chapters and members in 71 countries worldwide. It is an honor to receive this prestigious award. The Pittsburgh PES chapter also received this award in 1982. Thanks to members of the AdComm and the members of the Section for their efforts.

Additionally, the PES chapter was selected as having the 2nd best PES website based on *"the development of an attractive and professional website"*. We received a certificate and a check for $500. Thanks to Andrew Novotny for his effort.

Finally, the PES chapter also received a High Performance Chapter Award (HPCA) in the amount of $850. The HPCA is given to any PES Chapter that applies for it. The amount of award varies from a minimum of $400 to a maximum of $1000 and is based on the amount of activities and membership growth during the previous year. Our net growth in membership for 2004 was 1% and a net growth of 6% is expected. We gained 7% in new membership, but lost 6% of the existing members. Let us have a great membership growth during this year.

- Kal Sen

Robotic Servicing of the Hubble Telescope

Edward Cheung, Ph.D.
HST Principal Engineer

The Hubble Space Telescope (HST) has been in space for 15 years, but maintains its place as the premier optical space telescope in the world due to the regular servicing by Shuttle Astronauts. However, the loss of the Space Shuttle Columbia has forced a reevaluation by NASA on how to perform the final servicing mission that was planned in 2007. Our recent work investigates how we would equip an unmanned spacecraft with a robotic system to perform the tasks formerly intended for a human astronaut.

Mr. Cheung received his B.S. and Ph.D. degrees (both in Electrical Engineering) from Worcester Polytechnic Institute in 1985 and Yale University in 1991, respectively. Since then he has worked at the NASA Goddard Space Flight Center (GSFC) in Greenbelt, Maryland. He works at the GSFC Robotics Laboratory, has been with the HST Project since 1996, and has several projects flying in space on HST.

Place:	Westinghouse Energy Center, Monroeville
Date:	June 20th
Social:	6:30 PM
Program:	7:00 PM

For more information or to register contact Dr. Kal Sen at (724) 696-1611 or senkk@ieee.org by June 13.

Directions: From downtown Pittsburgh, take the Parkway East Outbound to Exit 14A (Monroeville). Cross the traffic light (Business 22) and proceed on Rt. 48 South for two traffic lights. Turn left onto Northern Pike. Proceed East ~ 0.2 miles and turn right at the first traffic light onto Westinghouse Drive. Travel 0.7 mile to the three flags where the main entrance is located. Parking in the evening will be plentiful in the large area in front of the building. Enter the main entrance. Check with the security inside. You will be directed to the proper auditorium for the presentation.

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

2005 PES Outstanding Engineer Awarded to

Keith H. Sueker, P.E.

Mr. Sueker received a B.E.E with high distinction (1947) and an M.S.E.E (1950) in Electrical Engineering from University of Minnesota and Illinois Institute of Technology, respectively. He worked at Westinghouse for 19 years and then at Robicon Corporation for 24 years in various positions as an engineer and a manager. He is a Senior Member of the IEEE and a registered Professional Engineer in the Commonwealth of Pennsylvania.

Mr. Sueker has been a member of the PES/IAS Administrative Committee of the IEEE Pittsburgh Section since its recent formation in 2003. He has generated funds for the local IEEE by offering a tutorial on Transformers in 2003 and on Power Electronics in 2004. In addition, he gave a talk on Power Factor and Harmonics in a local IEEE meeting. He organized a tutorial on Variable Frequency Drives and a plant tour at Robicon. He also organized a tour of Allegheny Energy's Springdale Power Plant. These programs were well attended and appreciated by the attendees. Recently, he completed his book titled *Power Electronics Design* that is to be published by Elsevier in 2005.

Shielding: Theory and Design

Michael J. Oliver
MAJR Products Corporation

It is important for electronic and hardware engineers to not only be knowledgeable of a product's intended function and performance, but also the ability of the product to perform within electromagnetic compatibility (EMC) limits. In this talk, practical shielding theory and design fundamentals are introduced including crosstalk, electromagnetic fields, board level and enclosure shielding. A segment on testing of board level shields is presented that is affiliated with an aperture attenuation modeling program used to model attenuation characteristics prior to expensive compliance testing. Finally, honeycomb vent panels and respective plating attenuation comparisons are discussed.

Not addressed in this talk, but as background information, standard EMC limits are maintained by the international regulatory environment for EMC such as the International Special Committee on Radio Interference (CISPR) of the International Electro technical Commission (IEC). For product acceptance, the Federal Communication Commission (FCC) in the US and the Conformite Europenne (CE) compliance marks are paramount for product sale throughout the world.

Mr. Oliver is Vice President of Electrical / EMC Engineering at MAJR Products Corporation in charge of new product development, customer technical quoting/consulting, and quality management. His expertise is in EMI/RFI shielding technology with a background in electronics, military shelter electrical systems, and high power antenna/radome design. He holds a B.S. degree in Electrical Engineering from Gannon University and has been an Electrical Engineer since 1989. He holds three patents (two pending) on thermal management-EMI/RFI shielding devices, has experience in the design and testing of aerospace antennas, military shelter electrical systems, and electronic components, and has performed open and anechoic chamber radiated tests to military standards. He has written numerous technical papers on electromagnetic shielding components, shielding product enhancement, and the development of test specifications and procedures for antenna and radome measurements. He currently serves as Vice Chairman of the SAE AE4 Electromagnetic Compatibility Committee and a member of the IEEE EMC Standards Advisory Coordination Committee (SACCom) Societies.

Place:	Westinghouse Energy Center, Monroeville
Date:	June 29th
Social:	6:30 PM
Program:	7:00 PM

This meeting will be of particular interest to the members of PES and IAS. For more information or to register, please contact Dr. Kal Sen at (724) 696-1611 or senkk@ieee.org by June 22nd.

Directions: See the article on page 1 for directions.

Fifth Annual Golf Outing

Place:	Diamond Run Golf Club Sewickley, PA
Date:	July 18th
Registration:	11:30 AM (with Casual Lunch)
Shotgun Start:	1:00 PM
Reception:	6:00 PM
Dinner:	6:30 PM

This is a four-person scramble, and all alumni and their guests are welcome to participate regardless of skill level. All participants must have their own clubs.

The cost for the outing is $145 per person including greens fees, cart rental, lunch, and dinner. Prizes will be awarded!

Reservations must be in by July 5th. Contact Kristen Bires at (412) 624-9813 or kbires@engr.pitt.edu for more information or to make a reservation.

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Electric Vehicles and the Land Speed Record

Nigel P. McQuin
McQuin Electrical Power Consulting, Inc.

In May 2000, a group of college students had a dream of building an electric car, with the intention of breaking the existing land speed record. In October 2004 at the Bonneville Speedway on the salt-flats of Utah, they achieved this goal by establishing three new land speed records. The most outstanding achievement was the claiming of the world record of 321.83 mph for the fastest electrically powered wheeled vehicle, which supersedes that previously held by the European TGV high-speed train.

Experience in pulsed power-supply designs and a wide variety of induction machinery designs and applications have played an important role in the development of electrical machinery for electric and hybrid-electric vehicles, for both civilian and military applications. This has lead to the design of specialized traction drive motors for some US university electric racing car teams, as well as a major student project for an all-electric Class III land-speed-record car. Some details of these designs, the development process, and the race trial performance will be presented.

Mr. McQuin gained a 1st Class Honors Degree in Electrical Engineering from Imperial College, London, England in 1977, specializing in electrical power systems and rotating machinery. He progressed from development engineer through Vice President and Test Laboratory Manager at various companies. Since 1996 he has been self-employed as an independent Electrical Power Consultant.

Mr. McQuin has been chairman of Short-Circuit Testing Liaison - North America, a coordinating body for the high power electrical test laboratories within NAFTA. He is also on the IEEE main standards committees for Switchgear (C37), Transformers (C57), Surge Protection Devices (C62), Electrical Machinery (C50) and High Voltage Testing Techniques (PSIM).

Place:	Westinghouse Energy Center, Monroeville
Date:	July 27th
Social:	6:30 PM Pizza and Soda
Program:	7:00 PM

Consultants Network

The Consultants Network will meet this month. Plans for the meeting are being finalized and will be emailed to all CN members.

If you are a consultant or are considering becoming a consultant of engineering services, the Consultants Network is the place to go to meet other IEEE members who are also consultants. In addition, the CN maintains an On-line listing of IEEE members who are consultants for reference by interested companies. This group can be a very valuable resource on consulting, information and networking for IEEE members. Speakers can discuss such topics as taxes, self-marketing, finances, fee setting, software, and liability insurance.

Place:	Westinghouse Energy Center, Monroeville
Date:	Fourth Tuesday of the month
Social:	6:30 PM
Program:	7:00 PM

For more information, to be listed on the email mailing list, or to register for the meeting, contact George Crawford at (412) 675-9164 or gwc2@psu.edu.

Life Member Chapter

Issues Associated with the Interconnection of Distributed Generation to the Electric Power Supply System

Mr. Joseph L. Koepfinger

The significance of the recent Northeastern Blackout with respect to reliability problems of the U.S. power grid, and the unresolved questions on how to improve it will be presented and discussed. Also, considerations for what can be done at an individual's own home to provide backup emergency power for critical needs will be discussed. The impracticalities inherent in the strategy of supplying a substantial fraction of our electrical power needs by means of wind and solar power will be discussed. The speaker will host a question and answer session on this topic following the presentation.

Mr. Koepfinger has had a long career as an engineer and manager with Duquesne Light. He was a major contributor to the design of the generation plant at Beaver Falls. Additionally, he has a lifetime of service to the IEEE including many years on the Standards Board, serving as Chairman for some of them. In post-retirement activity, Mr. Koepfinger is a distinguished IEEE lecturer which has taken him as far as India, and continues as a consultant to Duquesne Light.

Place:	George Westinghouse Technical Center Building 801, Room 2C14 (2nd floor corridor between lobby and cafeteria)
Date:	June 23rd
Program:	1:30 PM

The Technical Center is easily accessed via Exit 10A of the Parkway East in Churchill Borough. A cafeteria is open there every weekday from 11:30 a.m. to 1:00 p.m. and provides a convenient place for those attending the meeting to buy lunch before the meeting. For more information, please contact Bob Grimes at r.d.grimes@ieee.org.

2004-2005 Pittsburgh Section IEEE Program Calendar

Group/Society	October	November	December	January	February	March	April	May	June
ExecComm **Kalyan Sen** **(724) 696-1611**	**25 WVU**	**18 Point Park**	**16 Point Park**	**20 Point Park Officer Elections**	**17 Pitt - Oakland**	**17 CMU**	**21 Pitt - Greensburg**	**19 Papa J's 5:30 PM**	**ExecComm does not meet in summer**
Section Mtngs **Kalyan Sen** **(724) 696-1611**					**19 Robot Car Race**		**28 History Dinner**		
Life Members **Bob Grimes**									
IAS & PES **Charles Urso** **(412) 338-4871** **Faruq Ahmed** **(724) 477-1253**	**6 Power Electronics** **28 Tutorial**	**4 Tutorial** **11 Industrial Power Systems** **17 Tour Alleg. Eng.**	**2 Dist. Generation** **9 Voltage Sag**	**26 Adaptive Identification**	**23 Rail Guns**	**30 Project Management**		**31 - Wind Farm Tour**	**20 Robot Servicing of Hubble** **29 Shielding**
Computer **John Twigg** **(724) 387-2772**		**6-12 SC2004 Conference**	**15 Software Quality**			**16 Next Gen. Search Engines**			
Communication **Prashant Krishnamurthy** **(412) 624-5144**		**12 RFID Privacy**				**25 New Techniques for Telecom Monitoring**			
Robotics **Guy Nicoletti** **(724) 836-9922** **Ron Stone** **(412) 488-1100**	**26 Image Processing**		**9 Patient Recovery**					**5 Miniature Micro/Nano Robotics**	**20 Robot Servicing of Hubble**
Prof. Activities **Joe Kalasky** **(724) 838-6492**	**2 Consulting Seminar**								
Signal Processing **Mike McCloud** **(412) 624-9674**	**26 Image Processing**	**3 Tracing Traitors** **18 Double-Disp. Channels**					**20 Wireless Network Design Based on Constrained Capacity**		
Magnetics **Ganping Ju** **(412) 918-7046**						**31 Half Metals Spin Torque and Nanorings**			
Constants Network **George Crawford** **(412) 675-9164**							**26 Contract Employment**		