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October 2004

Rock River Valley Section

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Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

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RRVS Section and IAS and PELS Chapters Meeting

## Advances in High Efficiency Interior Permanent Magnet Motor Drive

**When** October 28, 2004

**Where** Rock Valley College, Student Center (SC), Room 1224. I-90 to Riverside Blvd., exit and go west to Mulford Rd. Go south to first light, turn east into RVC. Follow road to left to last building on right. **Park in lot, go to SC building west of Technology Center.**

### Agenda

6:00 PM Social  
6:30 PM Dinner  
7:30 PM Presentation

### Program

This lecture presents a successful design of high efficiency interior permanent magnet motor using NdFeB magnets. It is designed to operate both at line and variable frequencies. Line-start with high inertia load was a special consideration. Its efficiency power factor product is 50% better than the conventional induction motors of identical ratings.

### Speaker

**M. Azizur Rahman** (S'67-



M'68-SM'73-F'88) has 41 years of teaching including about 10 years of full-time and concurrent industrial, utility and consulting experiences at GE, Schenectady, GE Canada, Peterborough, Newfoundland Hydro, Dhaka Electric Supply, Iron Ore Company of Canada, etc. He has been a visiting Professor and Fellow at the Imperial College, London, Technical University of Eindhoven, University of Manitoba, University of Toronto, Nanyang Technological University, Tokyo Institute of Technology, University of Hong Kong and Tokyo Science Uni-

versity. He has published more than 505 papers including eleven patents, and two books as well as 4 book chapters. His current research interests are in machines, intelligent controls, power systems, digital protection and power electronics.

### Meal/Reservations

Dinner will feature chicken and vegetable entrees. Please make your **dinner reservations** by **calling Ginger at 815-394-5696 or sending her an email (ginger.spinasanta@hs.utc.com) by Monday, October 25, at 5pm.** Please include the following information: your name, phone number, email address, and IEEE member number, and choice of dinner entree. Dinner is \$5 for members, \$2 for student members, \$11 for non-members and \$5 for non-member students. Unemployed members may call one of the officers for special arrangements.

### Note

The meeting is open to the general public. You need not be an IEEE member. Guests are welcome. However, please call to enable us to make appropriate arrangements.

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### September NIU NASA Meeting (non-IEEE affiliated) Recap

Dr. Michael Greenisen, NASA Spacestation Life Science Scientist, presented a captivating talk on "International Space Station: Transitional Platform for Moon and Mars" on Thursday, September 23, 2004, at NIU's Barsema Hall Auditorium. The most serious issues in long duration space flights are health issues mainly around the high levels of radiation that the body would be exposed to for very long periods, and the deleterious effects of micro-gravity on the body. Appropriate shielding can help mitigate the effects of radiation, and artificial gravity can help mitigate the effects of micro-gravity. Dr. Greenisen discussed alternative artificial gravity solutions.

### IEEE Organizing Global Pre-College Technology Education Program

Continuing in its tradition of innovation, IEEE is leading the development of a new non-discriminatory global pre-college technology education program. The program titled, *emeritbadges.org*, will be directed globally towards pre-college boys and girls.

*Emeritbadges.org* has developed hands-on electricity and electronics instructional material based on the Boy Scouts merit badge requirements. Instructional material for computer education is being developed. Any student, boy or girl can use the program to enhance technical literacy and learn more about viable engineering and other technical career options.

*Emeritbadges.org* Project Director Ralph W. Russell, II from the IEEE Richmond, VA Section said that this non-discriminatory program would be promoted globally through IEEE and youth programs such as World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts. The next use of the new global pre-college electronics education material and hands-on kit will be at the 2005 National Scout Jamboree in Caroline County, VA, USA. Over 35,000 scouts will attend the Jamboree from the USA and several other countries.

Project leaders have started discussions with national and regional Girl Scout leaders to develop a method of incorporating the *emeritbadges.org* program into the Girl Scout program. The next step will be to start discussions with the global World Organization of the Scout Movement and The World Association of Girl Guides and Girl Scouts.

The 2005 Jamboree will be held at Fort A. P. Hill in Caroline, Virginia. The Jamboree will start on Monday, 25 July 2005, and end on Wednesday, 3 August 2005. Hundreds of volunteers that can serve as Assistant Instructors at the Jamboree Electronics Merit Badge booth for at least two days are needed. Additional project and volunteer information can be found at <http://www.emeritbadges.org>.

### November Meeting Preview

This meeting will be the annual joint section and NIU student branch meeting held at NIU in DeKalb, IL. The topic and date are TBD.

### September RRVS Meeting Recap

**John F. Santarius**, the Plasma Engineering Group Leader at the Fusion Technology Institute, and a Senior Scientist in the Engineering Department at the University of Wisconsin—Madison, gave an interesting presentation on advanced fuel for use in producing energy from fusion reactions. The fuel is deuterium with helium-3 (D-3He). Most remarkably is that the nearest source of a quantity large enough to support a fusion economy is found on the surface of the moon! Lunar 3He mining techniques and issues were discussed at length.

### Chicago/Rockford IEEE Consultants Network Mtg

The next meeting will be on Monday, **November 22, 2004**. The optional informal dinner is at 6:15 PM at Bakers' Square (270 E. Northwest Highway and North Court), and the meeting at 7:30 PM at the Palatine Public Library (700 North Court, Palatine, IL). **Roy Leventhal**, an Electronics Design Consultant will make a presentation on "**High Speed Circuit Simulation for Signal Integrity**". Go to <http://www.drblank.com/coaction.htm> for more info.

### Submissions to *Event Sense*

Send articles and job ads to the *Event Sense* editor, Bob Parro, via email (preferred), or fax. Please make submissions by the twenty-fifth of the month. All submissions are subject to editing for style, clarity, and space considerations.

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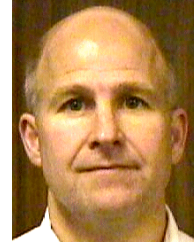
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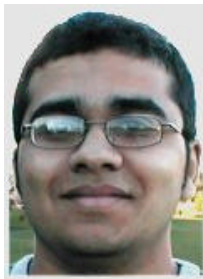


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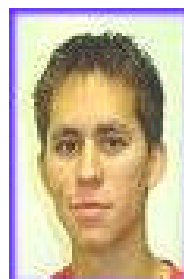
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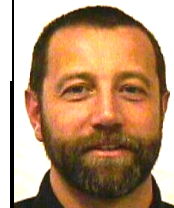


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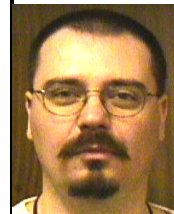
Messages for student officers can be left at the NIU Dept of Electrical Engineering,  
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**Calendar**

**October RRVS Section Meeting** ..... **October 28**  
"Advances in High Efficiency Interior Permanent Magnet Motors" at Rock Valley College Student Center Room 1224.

**November RRVS Section Meeting** ..... **November TBD**  
Annual joint RRVS and NIU Student Branch section meeting at NIU in DeKalb, IL



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