
April 2002

Rock River Valley Section

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Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

Computer/Control Systems, PELS, IAS Chapters Meeting
**Power Electronics & Conditioning
for Electric Actuation**

When April 18, 2002

Where Rock Valley College, Technology Center, Room 117. I90 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.

Agenda

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

Program The U.S. Air Force vision of a More Electric Aircraft (MEA) is based on the utilization of electric motor drives for flight control and utility actuations. The lecturer describes the innovative work performed in the research and development of a high voltage (270 Vdc) and high temperature (200°C) motor drive that utilizes Silicon Carbide (SiC) semiconductors. Silicon carbide is a new semiconductor material with the potential for superior performance in power electronics applications. The performance advantage of SiC over Silicon (Si) in power electronics applications include lower resistance devices, higher junction temperature, and higher case temperature operations. The focus of the lecture is restricted to the engineering laboratory hardware development, which constituted the first phase of the program.

Speaker Caio A. Ferreira (F'00) received the B.S. degree in electrical engineering from the University of Missouri, Columbia, MO, in 1979, and the M.S. degree in systems engineering

from Case Western Reserve University, Cleveland, OH, in 1985.

In 1979, he joined the Aerospace



Electrical Systems Department, General Electric Company, Erie, PA, as a Design and Development Engineer. His responsibilities included the design and development of electrical machines for aircraft electric power generating systems. From 1985 to 1997, he was with the Research Department, Sundstrand Aerospace, Rockford, IL, where he was Program Manager and Principal Investigator of a number of programs to develop advanced electric power systems for military aircraft.

From 1997 to 1998, he was with Northrop Grumman Corporation, El Segundo, CA, where he was Principal Engineer in the Integrated Systems & Aero-structures Sector, Vehicle Systems Group. He was Program Manager and Principal Investigator for programs on research, development and integration of electric power technologies for aerospace vehicles. In 1999 he became President of Mechatronic Systems LLC, Huntington Beach, CA. He is the holder of six patents. Mr. Ferreira is Past President of the IEEE Industry Applications Society and past chair of the RRVS for six years!

Door Prizes

Sponsored by RRVS.

Meal/Reservations

There will be a meat selection and a vegetarian selection for the meal associated with this meeting. Please reserve your space and/or dinner selection by **calling Ginger at 815-394-5696 or sending her an email (ginger.spinasanta@hs.utc.com) by Monday, April 15, at noon.** Please include the following information: your name, phone number, email address, and IEEE member number. Dinner is \$2 for student members, \$5 for members, \$13 for non-members.

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.

March Tour Recap

About 20 section members received an awesome tour of Hamilton Sundstrand, one of the best I've been on. The tour began with an excellent overview by John Diemer of UTC and HS organizational structure, content on aircraft (below left), product/technology evolution (below right), and product lines (aircraft systems products below center). This was followed by an incredible walking tour of the design, manufacturing, test of electric power generating system products and actuation system products. Zoom in for better clarity.

Content

Evolution

HAMILTON SUNDSTRAND MERGER: 6/99

Integrated Drive Generator

270 Voltage DC Generator

Variable Frequency Generator

Power Conversion

Secondary Power Distribution Assembly

Electronic Controllers

Primary Power Distribution Unit

May Meeting Preview

Our annual section picnic and officer elections for 2003 will be held at Hamilton Sundstrand Park. Please join us for free steak, other outstanding food, in addition to the great networking opportunities on Thursday, May 30, beginning at 6pm.

Chicago/Rockford IEEE Consultants Network Meeting

The next meeting will be on Monday, May 20, 2002. 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. The topic will be "Polish Your Presentation Skills and Score New Clients". Go to <http://www.drblank.com/coaction.htm> for more info.

All Electronic Delivery of the RRVS Newsletter

The RRVS Newsletter is now available online. Members who would like to have a copy emailed to them, please send an email request to b.parro@ieee.org. Email notification of availability of the newsletter at the section website (see page 1, upper right corner) will be sent to all members with whom we have a valid email address on file. Please check for a valid email address.

Submissions to *Event Sense*

Send articles and job ads to the *Event Sense* editor, Bob Parro, via e-mail (preferred), or fax. Job ads will run for two consecutive months. Contact the *Event Sense* editor if the ad needs to run longer. 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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*Messages for student officers can be left at the NIU Dept of
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(815) 753-9974 or e-mail at sb.niu@ieee.org*

**The Rock River Valley Section gratefully acknowledges the following
companies and university for supporting Section Officers:**

Hamilton Sundstrand • Northern Illinois University • BP Technologies



Rock River Valley Section
Established 1947

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Calendar

April Section Meeting April 18

Caio Ferreira will speak about advanced power electronics and conditioning for electric actuators used in the More Electric Aircraft

May Section Picnic/Elections May 30

Hamilton Sundstrand Park



Joint Computer/
Control Systems
Society Chapter
Established 1995



Industry
Applications
Society Chapter
Established 1992



Power
Electronics
Society
Chapter
Established 1996

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Time-Sensitive Material

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