
September 2005

Rock River Valley Section

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Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

RRVS Section and IAS Chapter Meeting

Fuel Cells and Fuel Reformers for Portable and Non-Portable Power Sources

When September 22, 2005

Where

Rock Valley College, **Woodward Technology Center, Room 117 & 119**. I-90 to Riverside Blvd., exit and go west to Mulford Rd. Go south to 2nd light, turn east into RVC. Follow road to left to last building on right.

Agenda

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

Program

The presentation will begin with an introduction to the present status of R&D on fuel cell-based power sources for stationary, portable, and transport applications.

I will highlight the development of all-ceramic microreactors for in situ hydrogen production by reforming of safer, easier to store liquid fuels.

Second, I will discuss a unique approach to develop direct liquid fuel cells for portable applications. Laminar flow is exploited to create a microfluidic fuel cell that lacks the usual polymer electrolyte membrane. This membraneless fuel cell design eliminates several of the technical issues related to the use of polymer electrolyte membranes including the occur-

SiC and SiCN materials for high temperature microreactors, I.-K.

rence of fuel crossover, membrane dry out, and limitations to the chemistries and media being used. The design, fabrication, key performance characteristics of these fuel flexible membraneless fuel cells will be presented. Also, scaling challenges to obtain, for example, 20W fuel cell-battery hybrid systems for battery recharging applications will be discussed.

I will conclude with sharing some thoughts on the short and long term future of different fuel cell-based technologies and approaches for power sources for portable and transport applications.

Speaker

Paul J.A. Kenis, Ph.D.

is an assistant Professor in the Department of Chemical & Biomolecular Engineering at the University of Illinois at

Urbana-Champaign, Professor Kenis received his MS in Chemistry from Nijmegen University, (1993) and his Ph.D. degree in Chemical Engineering from Twente University, (1997), both in The Netherlands. Other current projects include the development of platforms for biological cell studies, and micro/nanofluidic tools for nanomanufacturing.

Meal Reservations

Dinner will feature a buffet consisting of Baked Chicken, Vegetable Lasagna, salad potatoes, mixed vegetables, rolls, and a variety of mini desserts. Please make your **dinner reservations** by calling **Ginger at 815-394-5696** or sending her an **email (ginger.spinasanta@hs.utc.com) by Monday, September 19, at 5pm**. Please include the following information: your name, phone number, email address, IEEE member number, and choice of dinner entree. Dinner is \$7 for members, \$5 for student members, \$11 for non-members and \$7 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. Call Ginger at 815-394-5696 for questions.

May RRVS Elections-Picnic Recap

The slate of candidates for elected office in the Rock River Valley Section put forth by the Nominating Committee were all unanimously elected by voice vote during the May 26 RRVS Elections-Picnic. That election was for offices to be held during the 2006 calendar year. These were:

Section Chair — Jitendra Solanki

Section Vice Chair — Alkesh Patel

Section Secretary — Nolan Wanner

Section Treasurer — Larry Wachowiak

Computer and Control Systems Societies (C&CS) Chapter Chair — Byron Mehl

Power Electronics Society (PELS) Chapter Chair — Neal Clements

Industry Applications Society (IAS) Chapter Chair — Vietson Nguyen

It was good to network with old acquaintances and new friends.

October RRVS Meeting Preview

The October RRVS meeting will feature the interesting topic of printing circuits on paper.

Chicago/Rockford IEEE Consultants Network Meeting

The next meeting will be on Monday, **September 26, 2005**. 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 independent trainer and contractor with 45 years of engineering experience specializing in EDA modeling and simulation for signal integrity, power integrity, and EMI, will make a presentation on "**USING SIMPLIFIED MODELS TO SIMULATE COMPLEX I/O: The Importance of Balancing Simulation Speed with Model Complexity**". Please 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 e-mail (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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*Messages for student officers can be left at the NIU Dept of Electrical Engineering,
(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

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Rock River Valley Section
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Calendar

September RRVS Section Meeting September 22
“Fuel Cells and Fuel Reformers for Portable and Non-Portable Power Sources” at Rock Valley College

October RRVS Section Meeting October 27
“Printing Circuits on Paper” at Rock Valley College

November RRVS Section Meeting November TBD
Annual joint section/NIU student branch meeting held at NIU in DeKalb, IL



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