
October 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

Printing Consumer Electronic Products Using Traditional Graphics Arts Printing Platforms

When October 27, 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
7:30 PM	Presentation

Program

Since the late 1990's, scientists have suggested the use of non-photolithographic technologies to print field effect transistors (PFETs). The recent discovery of several advanced electrically active inorganic and organic inks comprised of nanoscale particles has led to wide spread interest to design and launch a new family of printed electronic products e.g. displays, sensors, and low RF devices. The market opportunities for many of these applications depend on cost. To achieve these cost targets, the materials and processes developed in the laboratory must be transferable to the high-volume manufacturing environment. One low cost manufacturing approach that has been proposed is based on traditional graphic arts printing platforms. The use of these platforms has been enabled by the development of novel classes of electrically functional inks (conductive, dielectric,

and semiconductive inks) comprised of nanoscale particles. These inks have demonstrated improved processing properties as well as performance when exposed to manufacturing and product use environmental conditions. Today, PFET technology has progressed to a point where it is becoming attractive for novel consumer products; to date over 35 miles and several thousands of sheets of all-printed integrated circuits (ICs) were fabricated that showed tight electrical performance tolerance.

Speaker

Daniel Gamota is a Senior Manager at Motorola. He earned his PhD in Materials Science and Engineering from the University of Michigan and his MBA from the Kellogg Graduate School of Management at Northwestern University. Dan joined Motorola in 1993 and is currently the managerial leader of a multi-company venture (The Dow Chemical Company, PARC, Inc., Xerox Canada, Inc., and Motorola, Inc.) that is developing novel materials, processing methods, manufacturing platforms, and testing strate-

gies to design and assemble low cost products based on organic and molecular semiconductor devices. Dan has been granted 21 U.S. patents and has 25 pending. Dan is chairman of the IEEE P1620TM Organic and Molecular Electronics Standards Working Group, IEEE P1650TM Nanotechnology Standards Working Group, and the IEEE Nanotechnology Council - Standards Committee.

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, October 24, at 5pm**. Please include the following information: your name, phone number, email address, IEEE member number, and choice of dinner entrée (chicken, vegetable lasagna or both). Dinner is \$7 for members, \$5 for student members, \$13 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. Please call Ginger at 815-394-5696 for questions.

September RRVS Meeting Recap

University of Illinois Urbana-Champaign Assistant Professor of Chemical and Biomolecular Engineering Paul Kenis gave a very interesting overview of his research into fuel cell technology. An interesting technique for fabricating ceramic structures with very high ratios of surface area to volume was presented. Dr Kenis is currently using the technique for reforming liquid fuels using metallic catalysts. The reforming process produces hydrogen that can then be used in a fuel cell. The reforming process is carried out at very high temperatures in what are essentially highly ordered sponge like structures with catalytic coatings throughout.

Dr. Kenis also presented information related to direct fuel cells. The direct fuel cell is a membrane-less fuel cell concept that uses laminar flows to create an interface rather than relying on the standard proton exchange membrane to separate the fuel from the oxidizer component.

Career Planning for a Changing World

The IEEE Chicago Section is hosting a day of short seminars on career planning on Saturday, November 12, 2005, from 8:30am to 2:30pm, at the Embassy Suites Hotel Chicago-O'Hare-Rosemont, IL. The cost is \$75 for members, \$95 for non-members, and \$40 for students. For additional information call 800-898-IEEE.

Seminar topics include:

- Preparing for the Jobs of Tomorrow by Michael Wynne
- Enhancing Your Career by Kenneth Kuchar
- Marketing Your Ideas (Communicating with Non-technical People) by Linda Jansak and Judy Rosenberg
- Effective Technical Presentations by Hugh Dunbar
- From Corporate to Entrepreneur by Bret Johnson and Jeff Coney
- Protecting Your Intellectual Property by Martin Faier
- Time/Goal Management (Managing Your Start-up)

Chicago/Rockford IEEE Consultants Network Meeting

The next meeting will be on Monday, **November 29, 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. Please go to <http://www.drblank.com/coaction.htm> for more info.

November RRVS Meeting Preview

The November RRVS meeting will feature Professor Biswa Nath Datta, Distinguished Research Professor, Professor of Mathematical Sciences, and Adjunct Professor of Electrical and Mechanical Engineering at NIU, discussing advancements he and his collaborators have developed in the area of feedback control in vibrating structures.

Submissions to *Event Sense*

Send articles and job ads to the *Event Sense* editor, Bob Parro, via e-mail. 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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RRVS Calendar

- October RRVS Section Meeting October 27**
"Printing Consumer Electronic Products Using Traditional Graphics Arts Platforms" at Rock Valley College
- November RRVS Annual Section/NIU Student Branch Joint Meeting November 15**
"Active Vibration Control and Model Updating in Structural Dynamics: Linking Control to Industry" at NIU in DeKalb, IL
- January RRVS Section Meeting January 25**
"Nanotechnology" at Rock Valley College



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Inside This Issue

- October RRVS Section Meeting Notice 1
- September RRVS Meeting Recap 2
- November RRVS Meeting Preview2
- Career Planning in a Changing World Seminar2
- Chicago/Rockford IEEE Consultants Network Meeting2
- 2005 RRVS Officer Contact Information 3
- RRVS Calendar 4