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September 1999

Rock River Valley Section  
[www.ieee.org/regional/section/rock\\_river/](http://www.ieee.org/regional/section/rock_river/)

Event



Sense

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The Institute of Electrical and Electronic Engineers Inc.

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RRV Section & Power Electronics Chapter Meeting

## Motor Drive Technologies: Trends and Tradeoffs

### When

September 30, 1999

### Where

Ryan's Family Steak House, 5051 E. State Street, Rockford, across the street from (west end of) Rockford College, on the south side of State.

Please identify yourself as being with the IEEE and gather in the back room which is at the north end of the large room closest to State Street. We will all go through the food line at the same time.

### Agenda

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

### Program

An electric drive system contains three major components. These are the motor, the power electronic converter and the controller including any required sensors. The three components have been the focus of many researchers in the area of motor drives. A comprehensive overview of the literature available in motor drive technologies with a focus on the research trends and tradeoffs in the three components will be presented. Three major motor drives, namely, the induction, the synchronous and the switched reluctance motors are considered. The

literature involving the motor, the power electronic converter, the controller and sensors in each of the three motor drive technologies will be presented and the research directions in each technology will be discussed.

### Speaker

Malik E. Elbuluk is a professor at The University of Akron. He received the B.Sc. (Honors) degree from the University of Khartoum in 1976 and the M.S., E.E. and D.Sc. degrees from the Massachusetts Institute of Technology, Cambridge, in 1980, 1981, and 1986, all in electrical



engineering.

He has been a Summer Research Fellow at NASA Lewis Research Center, Cleveland, OH from 1991 to 1999. His work at NASA includes Modeling and Simulation of the Space Station Freedom (SSF), the Power-By-Wire (PBW), the Power Electronic Building Blocks

(PEBB), the Starter/Generator for Aircraft Engines and Sensorless Control of Electromechanical Actuators (EMA) for the More-Electric-Aircraft (MEA). His teaching and research interests are in the areas of power electronics, electric machines, control systems, fuzzy logic and neural networks.

### Door Prizes

Sponsored by RRVS

### Meal

The RRVS will subsidize the cost of the buffet dinner only (cost to you of only \$1). If you choose something other than the buffet, you will be responsible for the whole cost of your meal. The buffet consists of two types of chicken, spaghetti, turkey, beef stew, salad bar, and some far too attractive desserts. Please make your reservations by calling **Gloria at 815-226-5247 by Tuesday, September 28, (please include your e-mail address in the information you provide Gloria - thanks)**. The cost of the dinner is **\$1 for IEEE members and \$10 for non-members**. 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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### Chicago/Rockford Consultants Network Meeting

The next meeting will be on Monday, September 27. Dinner is 6:15 PM at Bakers' Square (corner of US 14 Northwest Highway and N. North), and the meeting at 7:30 PM at the Palatine Public Library (700 North Court, Palatine, IL 847-358-1216). Bob Parro will give a presentation on Automated Requirements Management.

### May Picnic/Elections Recap

Three of the four elected positions on the RRVV Executive Committee for the 1999/2000 season were filled with the election held at the May 27 section meeting. The positions filled were:

<b>Chair</b>	<b>Don Zinger</b>
<b>Vice Chair</b>	<b>vacant</b>
<b>Treasurer</b>	<b>Larry Wachowiak</b>
<b>Secretary</b>	<b>Matt Zimmer</b>

In addition, all who attended enjoyed succulent steak and a huge spread of potatoes, beans, vegetables, fruit, cookies, and an assorted variety of liquid refreshments.

The outgoing section chair, Bob Parro, received an appreciation award/plaque for his 5 years of service as chair.

### Access to NIU's Fall Extension & Distance Courses

You can find a listing of NIU's fall extension and distance courses at [www.ceet.niu.edu/extprg/proglist/credicrs/credsumfal.html](http://www.ceet.niu.edu/extprg/proglist/credicrs/credsumfal.html)

### Chair's Corner

As the new chairman of the IEEE Rock River Valley Section I would like to welcome you to another season of events hosted by this organization. I have taken over this responsibility after the previous chair, Bob Parro, retired from the post after many successful years of service. Bob has done a great job of leading us. While he was guiding the group there were many successful meetings where we brought in famous speakers from many parts of the globe. He also put an exceptional effort into the DSP tutorial we sponsored last fall. He has done an exceptional job and I only hope to keep in motion some of the momentum he created.

We are planning another full season of speakers, tutorials, and



tours. The season will start with a presentation from Malik Elbuluk, a distinguished professor from University of Akron. Having followed his work for many years I am sure his presentation on electric drives will be interesting and informative.

In the near future we are planning another tutorial. This time we plan to give an introduction to VHDL, a standardized language used in describing integrated circuits. The plans are to host it at Northern Illinois University on Nov. 18. Though it will not be as extensive as the tuto-

rial we had last year, it should be informative for the many of you just beginning to learn how to do electronic circuit design via language capture (as opposed to schematic capture).

Other meetings in the works include plans for tours and additional distinguished speakers. We will do our best to have meetings you find interesting and informative. The best way for this to happen is through input from you. Please let us know of any topics that you would like to hear about. Remember we are here to serve you. If you would like to become more involved feel free to contact me about becoming active in the Rock River Valley Executive Committee. We are always looking for additional support.

Again, I give you a hearty welcome to this new season. I hope to see most of you at our meetings over the next few months.

### 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.

e-mail: [b.parro@ieee.org](mailto:b.parro@ieee.org)  
fax: (603) 947-3356

**RRVS Executive Committee**

(l-r) **standing:** Larry Wachowiak, Treasurer; Hassan Mansir, ExCom member on leave; Don Zinger, NIU Student Branch Counselor; Matt Zimmer, Secretary and IAS Chapter Vice Chair; Roger Caruana, now moved out of the section; **seated:** Caio Ferreira, Former Past Section Chair and current IAS Vice President, Bob Parro, Joint Computer/Control Systems Chapter Chair & Past Section Chair; Bill Barber, ExCom member; Jim Buerosse, IAS Chapter Chair; Paul Peterson, former ExCom member. (not shown is Vietson Nguyen, IAS Chapter Chair)

**The Rock River Valley Section would like to give recognition to the following area company and university for supporting Section Officers:**

**Hamilton Sundstrand • Northern Illinois University**

## Rock River Valley Section of the IEEE 1999-2000

[W W W : [www.ieee.org/regional/section/rock\\_river/](http://www.ieee.org/regional/section/rock_river/)]

### Elected Executive Committee

Chair	Prof. Don Zinger	d.zinger@ieee.org	(815) 750-0540
Vice-Chair			
Secretary	Matt Zimmer	m.zimmer@ieee.org	(815) 394-3456
Treasurer	Larry Wachowiak	l.wachowiak@ieee.org	(815) 394-5676

### Appointed Executive Committee Chairs

IAS Chapter Chair	Jim Buerosse	j.buerosse@ieee.org	(815) 226-6078
IAS Chptr. Vice Chair	Matt Zimmer	m.zimmer@ieee.org	(815) 226-3456
Comp/CS Chapter Chair	Bob Parro	b.parro@ieee.org	(847) 490-6402
PELS Chapter Chair	Vietson Nguyen	aaejvn@snds.com	(815) 394-3230
Educational Activities	Joe Etminan		
Technical Activities			
Membership			
Awards			
Publicity, New sletter Editor	Bob Parro	b.parro@ieee.org	(847) 490-6402
Nominations			

### Northern Illinois University - Student Branch Officers

St Br Counselor	Prof. Don Zinger	d.zinger@ieee.org	(815) 753-0540
St Br Chair	Jamie Phillips		
St Br Vice-Chair	Michelle Marotta		
St Br Secretary	Rob Reeder		
St Br Treasurer	Ryan McMillin		

*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](mailto:sb.niu@ieee.org)*



Rock River Valley Section  
Established 1947

**Electronic IEEE Membership Application**  
An electronic on-line application is available at  
[www.ieee.org/join.html](http://www.ieee.org/join.html).

## Calendar

- September Section Meeting** ..... **Sep 30**  
Motor Drive Technology: Trends and Tradeoffs
- October Section Meeting** ..... **Oct TBD**  
Y2K (tentative)
- November Section Meeting/Seminar** ..... **Nov 18**  
VHDL Seminar, at NIU in DeKalb, IL



Joint Computer/  
Control Systems  
Society Chapter  
Established 1995



Industry  
Applications  
Society Chapter  
Established 1992



Power  
Electronics  
Society  
Chapter  
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## Time-Sensitive Material

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