
May 2007

Rock River Valley Section
ieee.rackoneup.net

Event

Sense

The Institute of Electrical and Electronic Engineers, Inc.

RRV Section Picnic and 2008 Section Officer Elections

Annual Section Picnic and Election

When May 31, 2007

Where

Hamilton Sundstrand Park,
North Pavillion 2 (see map on
page 2), on Newburg Road
north of the Chrysler Plant in
Belvedere.

Agenda

6:00 PM Networking
6:30 PM Dinner
7:30 PM Elections

Program

Picnic and RRVs officers elec-
tion. Members and friends are
cordially invited to attend the
Annual RRVs Section Picnic
on May 31, 2007. The RRVs
will provide the food and drink
**FREE OF CHARGE TO IEEE
MEMBERS.** In addition, 2008
RRVs elections will be held.

Meal/Reservations

Dinner will be **steak, chicken
or veggie burgers**; vegeta-
bles, corn on the cob, fruit, pop,
dessert and much more!
Please make your **dinner res-
ervations** by calling Ginger at
815-394-5696 or sending her
an email (ginger.spinasanta@hs.utc.com) by **Tuesday,
May 29, at noon.** Please in-
clude the following information:
your dinner choice (steak,

THE MEAL IS ON US!

(For IEEE Members)

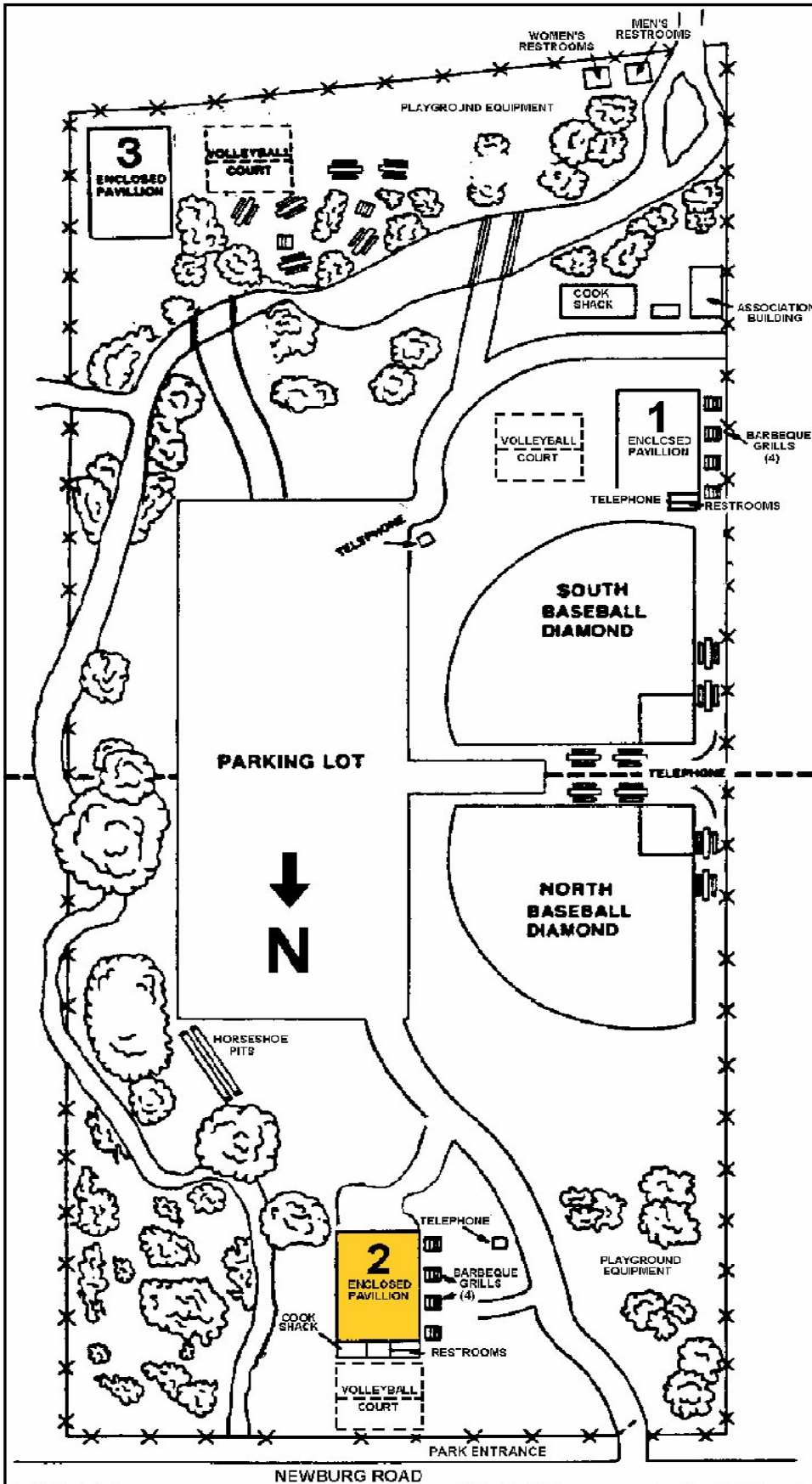
chicken, or veggie bur-
ger), name, phone num-
ber, email address, and
IEEE member number.
Dinner is **FREE** for
members and student
members, \$10 for non-
members and \$5 for
non-member students.
**IEEE MEMBERS WHO
ARE NEW AS OF FEB
1, OR THOSE WHOSE
MEMBERSHIP HAD
LAPSED AND WHO
SUBSEQUENTLY RE-
NEWED AFTER FEB 1,
MUST BRING THEIR
2007 IEEE MEMBER-
SHIP ID TO SHOW
PROOF OF ACTIVE
MEMBERSHIP.** Unem-
ployed members may
call one of the officers
for special arrange-
ments.

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.



Hamilton Sundstrand Park



April Meeting Recap

John M. Miller, Vice President of Advanced Transportation Applications, Maxwell Technologies gave an intriguing talk on *Energy Storage Technology, Markets and Applications, Ultracapacitors in Combination with Lithium-ion.*

Maxwell Ultracapacitor Material and Electrode

- On cost of ultracapacitors is dominated by carbon.
 - Raw material – coconut shells
- Carbon is the cost driver
 - Resin based – high purity, high matl costs
 - Natural product based – (coconut, wood, coal, peat, etc.) lower cost, higher impurities

Grid → Activated carbon powder → Electrode fabrication → Coating → Rolling/Winding

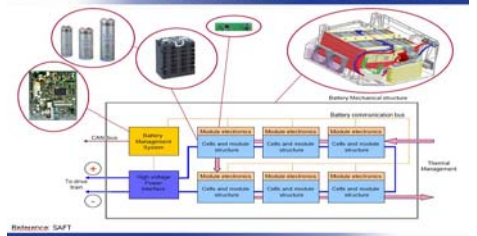
Source: Phil K. Swartz (2002), Institute of Science and Technology (IST), University of Agriculture and Technology, Research Institute in Carbon and related Fibers, Institute for Energy conversion/CO2 based Energy Science, 14th March 2007

Maxwell Markets for Energy Storage Systems

- More, and higher levels of electrification:
 - Cars, trucks, buses, trains...

Ford fuel cell concept vehicle, Toyota fuel cell concept with vehicle motor, Honda FCX/Cl cell vehicle, GM Autonomy fuel cell concept vehicle, GM Hybrid Bus, Conductor train

Maxwell Illustration of Li Ion System for HEV



Maxwell Ultracap's in Combination with Batteries

- It is well known that ultracapacitors in combination with lead acid batteries improve performance and extend life.
- Regenerative systems (hybrid) are essentially battery – ultracapacitor combination systems and are available.
 - Siemens 14x or Valeo STARS system.

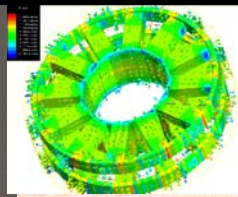
Acceleration – Power from Top to ESG

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.

e-mail: b.parro@ieee.org

2006/2007 YEAR-IN-REVIEW



< October 2006

Dr. Jack Gieras, Principal Research Engineer at Hamilton Sundstrand, discussed *Advancements in Electric Machines*.

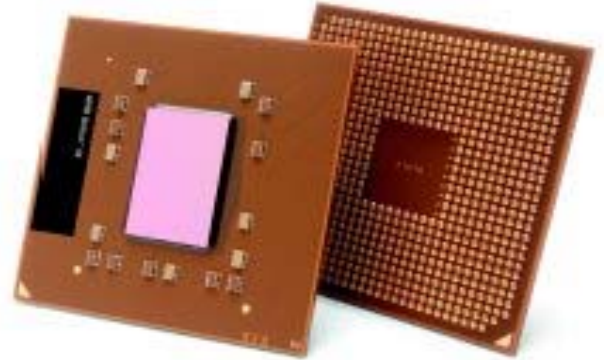
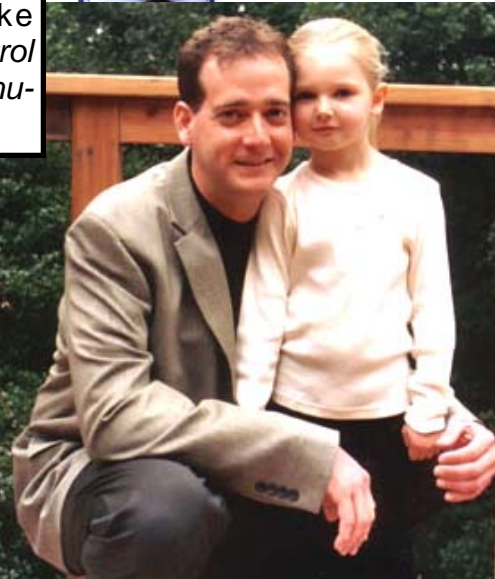


^ November 2006 ^

Dean Patterson, visiting professor at the University of Nebraska, presented *Solar and Alternative Energy—Engineering Issues*.

^ September 2006 ^

Professor Andrew Alleyne, Professor of Mechanical & Industrial Engineering at Univ of Illinois Urbana-Champaign, spoke about *Precision Control for Micro-Scale Manufacturing*.

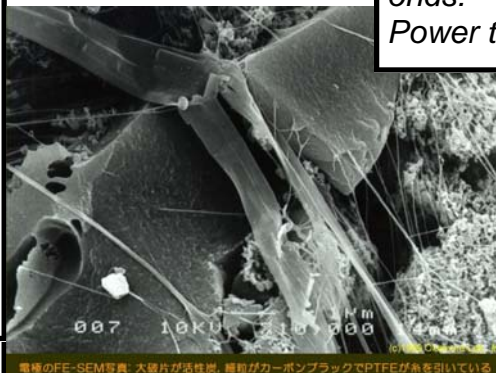


< February 2007 ^

David Hoskansan, Ph.D., a Senior Staff Engineer with the EMC Design group of Sun Microsystems, presented *0.1 Horsepower and 0 to 5 GHz in 50 Picoseconds: The Challenges in Delivering Power to Tomorrow's Microelectronics*.

^ January 2007

Giri Venkataramanan, Director of the Wisconsin Electric Machines and Power Electronics Consortium (WEMPEC), University of Wisconsin - Madison, spoke on *Engineering and the Bottom of the Pyramid*.



March 2007

Dr. Kaushik Rajashekara, Senior Technologist, Rolls-Royce Corporation, presented *Hybrid Electric and Fuel Cell Vehicle Architectures for Transportation Power Generation*.

^^ April 2007 ^^

John M. Miller, Vice President of Advanced Transportation Applications, Maxwell Technologies discussed *Energy Storage Technology, Markets and Applications, Ultracapacitors in Combination with Lithium-ion*.

^ May 2007 ^

Annual picnic and election of RRVS officers at Hamilton Sundstrand Park in Belvidere features steak, chicken and veggie burgers on the grill.

電極のFE-SEM写真。大破片が活性層。補助がカーボンブラックでPTFEが糸を引いている



Rock River Valley Section
Established 1947

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Electronic IEEE Membership Application

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Calendar

May Section Picnic/Elections May 31

Annual RRVs Section Picnic and 2007 Officer Elections at Hamilton Sundstrand Park in Belvedere, IL

September Section Meeting September 27

Topic and Speaker TBD at Rock Valley College in Rockford, IL

October Section Meeting October 25

Topic and Speaker TBD at Rock Valley College in Rockford, IL

November Section Meeting November 28

Topic and Speaker TBD at NIU Engineering Building in DeKalb, IL



Joint Computer/
Control Systems
Society Chapter
Established 1995



Industry
Applications
Society Chapter
Established 1992



Power
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Inside This Issue

- May Section Meeting Notice 1
- Hamilton Sundstrand Park Map 2
- April RRVs Meeting Recap 2
- 2006/2007 RRVs Meetings Year-In-Review 3
- Calendar 4