SCANFAX

September 2005
Volume 57, Issue 6

IEEE

Chicago Section Website:
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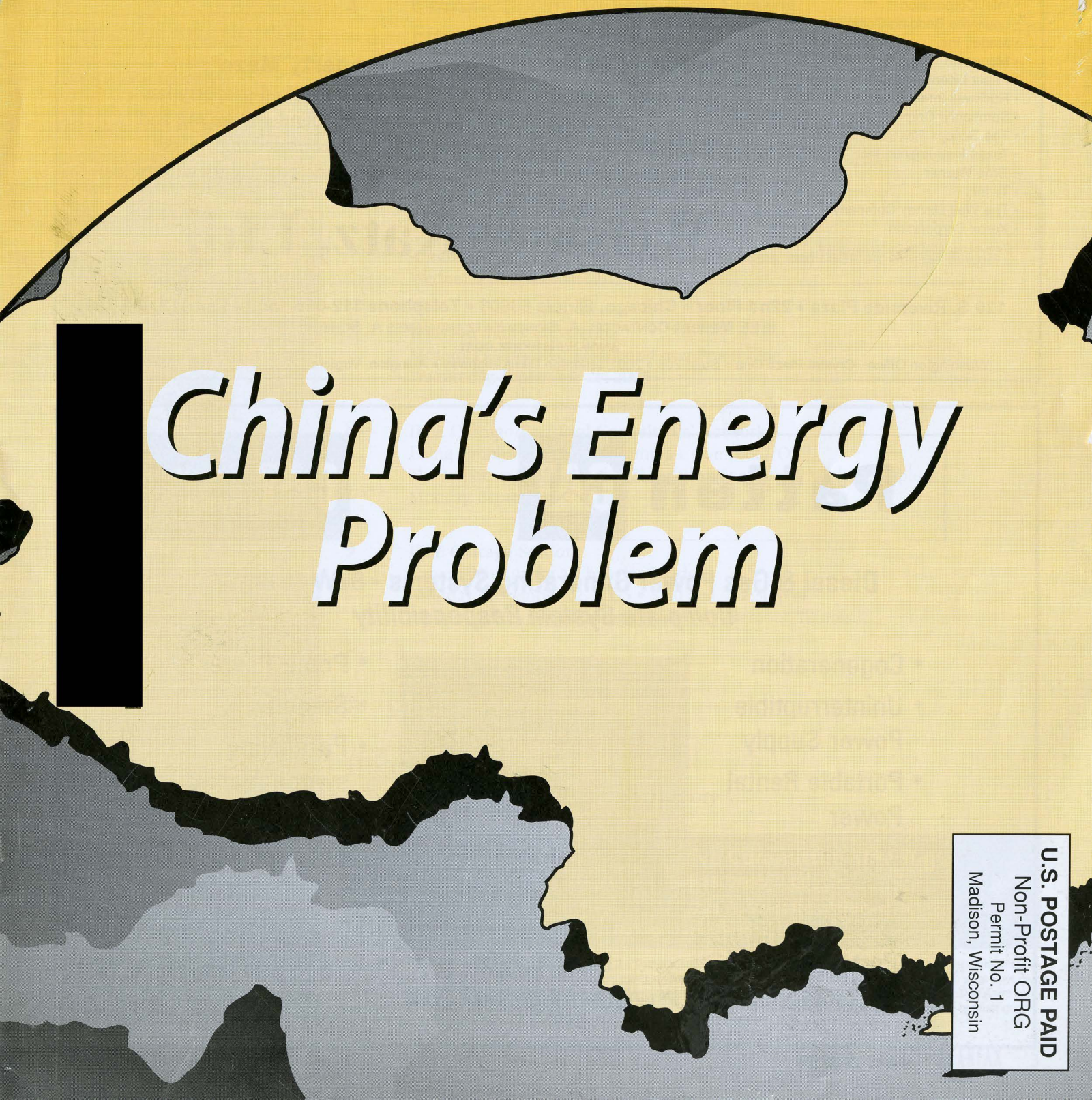
A publication of the
Institute of Electrical & Electronics Engineers
— Chicago Section —



China's Energy Problem

IEEE

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Institute of Electrical & Electronics Engineers
— Chicago Section —

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Published for IEEE by
Slack Attack Communications

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Printed By
Community Publications
McFarland, WI

SCANFAX (ISSN #0018-1297) is a monthly publication (except June, July and August) of the Chicago Section Institute of Electrical and Electronics Engineers, c/o Western Society of Engineers, 4513 Lincoln Avenue, Suite 213, Lisle, IL 60532, (800) 898-4333 or (630) 493-4333. It is published by **Slack Attack Communications,** 5113 Monona Drive, Madison, WI 53716, (608) 222-7630. Printing is by **Community Publications,** McFarland, WI 53558. For **advertising information,** contact Slack Attack Communications.

Subscriptions included in IEEE membership dues; non-member subscriptions: $25 per year.

Address corrections should be sent to: IEEE Membership, 440 Hoes Lane, Piscataway, NJ 08854-1331 or by phone (800) 678-4333.

Meeting notices should be sent to graphics@slackattack.com.

SCANFAX

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FEATURES

UPCOMING EVENTS

DEPARTMENTS

Chicago Section Executive Committee Meeting
Tuesday, September 13, 2005, 7:00 p.m.
DeVry DuPage, Room 132, 1221 N. Swift Rd., Addison, IL
No Registration Needed

China's Booming Economy Strains Electrical Energy Production

By Paul Zukowski

The blistering pace of economic development in the People's Republic of China seems to have outstripped the ability of its electric power industry to keep up, and has also befuddled the government's attempts to keep track of who is building what.

China commissioned new electric power plants with a total capacity of 34.84 million kilowatts in 2003 and 50.55 million kilowatts in 2004, topping a yearly record set by the U.S. in 1971 of 40 million kW. Yet the country is still experiencing widespread shortages and frequent blackouts.

Ma Kai, the chairman of the Chinese State Development Reform Commission Chairman said in May that electricity shortages persist due to "erroneous construction of excessively energy consuming facilities in the regions, irrational electricity consumption, and insufficient saving measures."

For example, North China's Shanxi province, the country's leading coal producer, will suffer a power supply shortage of 3 million kilowatts this summer, the worst in its history, according to the Shanxi Electric Power Co. The electricity generated by local power stations can only meet 70 percent of the demand, which has been growing 20 percent a year. A poor power transmission network and inefficient coal usage also aggravate the situation in which big power-consuming businesses and major polluters have been shut off and some factories have been asked to operate off the peak hours.

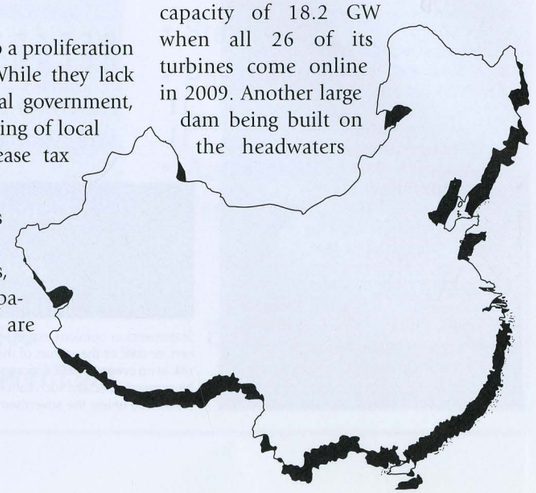
In Shanghai, a city of 15 million that is one of the most vibrant economic powerhouses in the Chinese economy, a huge gap exists between power generation capacity 11.40 million kilowatts this year and actual power usage at peak times that reached 16.7 million kW last year and is expected to hit 19 million kW this year, up 12.4 percent. Some of the gap is made up by importation of a total of 5 million kW in power from other regions through the East China Grid and State Grid. And the city is busy constructing additions to power plants and new plants to add up to 28 kW of capacity by 2008. In the meantime, the best officials can do is use an early warning system to notify enterprises beforehand when their power is scheduled to shut down.

These shortages have led to a proliferation of illegal power plants. While they lack the approval of the central government, they tend to have the backing of local authorities eager to increase tax and land use revenues.

The Chinese government is taking steps to address each of the problem areas, and electrical energy companies around the world are eager to help.

For example, China is reportedly seeking to build up to 30 nuclear power plants by 2020 in order to increase its nuclear power generating capacity to 40,000 mW, about five times its present capacity. A consortium made up of Westinghouse Electric Co., Mitsubishi Heavy Industries, and the Shaw Group has submitted a bid to build four reactors in China using Westinghouse's new 1,000 megawatt AP1000 reactor design that has been approved by the Nuclear Regulatory Commission. General Electric will submit an application for its 1,500 megawatt ESBWR reactor later this year.

Hydro-electric power generation can also be increased. China has a potential hydroelectric generation capacity of 300 GW, of which a third is now being used. As part of that, the Three Gorges dam project on the Yangtze River will have a generation capacity of 18.2 GW when all 26 of its turbines come online in 2009. Another large dam being built on the headwaters of the Yellow River will add a further 15.8 GW of hydroelectric capacity.



China also has homegrown companies working on the conservation side. Starway, a subsidiary of China Energy Savings Technology Inc., develops and distributes energy-saving products for use in commercial and industrial settings in China. Its devices provide energy saving rates ranging from approximately 25% to 45% in areas such as public or street lighting systems and small shops and restaurants up to large scale factories. Other products extend the life of various electric appliances such as industrial sewing machines by 100%.

Sun Li, chairman and CEO of China Energy Savings Technology said, "We also plan to form strategic partnerships with the world's leading suppliers of electric appliances and other energy savings companies in exploring the global energy saving markets, with the goal of becoming a recognized world brand."

China's energy-supply bottleneck has forced a growing number of officials and economists to reconsider the costs, economic and otherwise, of the booming economy, and to look for ways to maintain coordinated and sustainable social and economic development.

At the recent China Development Forum in Beijing, a key strategy developed was to build a resource-efficient recycling society that pollutes less. Reports are that more than 50 percent of China's 500 cities do not meet air quality standards largely as a result of the emissions from fossil fuel combustion. Energy demand is expected to double in China by 2020 with a resulting doubling in carbon dioxide emissions.

But officials are exploring alternate ways to meet the growing demand for electricity from the expanding economy besides the traditional approach of simply continuing to supply energy. The second strategic approach focuses on opportunities to alter demand by changing consumption and use patterns. By reducing demand growth while providing the same level of energy services, the theory goes that the economy grows at the same pace, but without new increases in greenhouse gases and other harmful emissions.

Enforcing environmental standards will take stronger laws and greater disincentives. At present the maximum penalty for failing to secure the necessary environmental impact assessment prior to construction permit is 200,000 yuan ($24,100), hardly a deterrent for a project worth billions of yuan.

Mao Rubai, chairman of the Environment and Resource Protection Committee of the National People's Congress said, "We need to build a strong legal framework to boost the circular economy – and this has dominated lawmakers' agenda." He said China will look to developed countries for laws that encourage recycling and environment-friendly consumption. ■

Chicago Section Election Results for July 05 to June 06 Season.

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For a complete list of the Chicago Section Executive Committee with links to their Email address, see the "Contact Us" page of our web site, http://ewh.ieee.org/r4/chicago/.

Evening Meeting

ED/CAS/SSC Chicago Chapter and the Electron Devices Distinguished Lecturer Program

3D: Design to Volume
A look at various 3D applications, their designs, and ultimate silicon results

Wednesday, September 21, 2005

Robert Patti
Tezzaron Semiconductor

About the Topic:
Integrated Circuits have been shrinking in size and increasing in speed and performance for decades as described by Moore's Law. However, as circuit designs continue to outperform the previous generation, RC interconnection delays are becoming a hindrance to circuit speed. One solution to alleviate the interconnect delay problem is 3D assembly and interconnection of ICs at the wafer level. Short vertical inter-connects in 3D ICs would replace much longer interconnects used in 2D ICs architecture. Wafers designed for specific functions (i.e. memory, MEMS, DSP, embedded processors, sensory array, etc.) may be stacked vertically, allowing for a smaller form factor, increased performance and functionality. Robert Patti of Tezzaron Semiconductor will discuss various types of 3D IC integration, issues, and Tezzaron's solutions. The Tezzaron process for wafer scale 3D assembly will be covered as well as a demonstration of a small 3D processor/memory device.

About the Speakers:
Robert Patti, 42, is the founder and CTO of Tezzaron Semiconductor Corporation. Tezzaron specializes in ultra high-density memory components, employing wafer level stacking of semiconductor sub-components. Prior to his affiliation with Tezzaron, Mr. Patti founded ASIC Designs, Inc. (ADI), of which he was the President and Chief Executive Officer from 1987 to 2000.

Mr. Patti actively provides system design and guidance to other members of the Tezzaron staff. Also, as time allows, he provides consulting services in the areas of design troubleshooting and yield enhancement. To date, Mr. Patti has been involved in the designing of over 100 ICs as well as numerous portable PCs, set-top boxes, and other high volume products.

Mr. Patti graduated from Rose-Hulman Institute of Technology with BSEE/CS and BSPH degrees in 1985. His under-graduate work focused on device physics, optics, and computer design. He also received a minor in Russian.

He is a holder of 13 US patents, numerous foreign patents, and more than a dozen pending patent applications in sub-micron semi-conductor chip technologies

Mr. Patti is a Member of the Board of Directors at Tezzaron Semiconductor Corp. as well as at Tezzaron Semiconductor PTE. He is a Member of the Scientific Advisory Board at Pharmaseq, a genomics company.

As a member of IEEE, Mr. Patti has presented topics at a number of conferences including the following: IEEE Computing Elements Mesa Conference 2000, IEEE Computing Elements Vail Conference 2002, 2003, 2005, Technology Venture Forum 2004, 2005, and Electrical Performance of Electronic Packaging Conference 2001. He has also had the honor of being a Keynote Speaker at MII Future of Semiconductors 2003, Taiwan.

Mr. Patti has also participated as a panelist at an IEEE International ASIC conference: "Analog and mixed signal design – Can you test it?"

He is also Vice Chairman JEDEC on Future Memories (DDR III) Task Group.

Meeting Location:
Motorola, 1301 Algonquin Rd, Schaumburg, IL. Enter Campus at Gate A. Enter Door 13 of the six story building. See maps at http://ewh.ieee.org/r4/chicago/ed-cas-ssc

Time:
6:30 Free Food and Drink
7:00 Presentation

Reservations:
Please call the IEEE Message Center at (800)898-IEEE or (630)493-4333 by 1:00 PM Monday, September 19th.

Information:
Email the Chapter at ed.cas.ssc.chicago@ieee.org or visit http://ewh.ieee.org/r4/chicago/ed-cas-ssc

Evening Meeting

IEEE Fox Valley Subsection

Motorola's Improved Broadband over Power Line

Wednesday, September 21, 2005

Dick Illman
Principal Staff Engineer with Motorola's Enterprise Mobility Solutions in Schaumburg, IL

About the Topic:
BroadBand over Power Line (BPL) is seen by some as a cost effective competitor to Cable and DSL Internet consumer access as well as a way to improve the reliability of the electric utility services. It is seen by others as a large source of intolerable interference in the HF spectrum. Motorola has developed an enhancement to the HomePlug standard, called Powerline LV which reduces HF interference to and from infrastructure and does not use the medium voltage power lines as a radiating element.

About the Speakers:
Mr. Illman is a Principal Staff Engineer with Motorola's Enterprise Mobility Solutions in Schaumburg, Illinois. His 31 year career with Motorola has focused on System Design and Implementation. He has been working on enhancements to a Canopy(tm) wireless and HomePlug standard solution for delivering IP connectivity using only low voltage electric utility power lines. This solution includes RF interference protection to and from existing licensed HF users.

Mr. Illman provides technical support for a wide variety of wireless and wired solutions for customers in the Enterprise market space including Utilities, Fortune 500, Transportation, and Couriers. Prior to working in Schaumburg, Mr. Illman was the Engineering Project Manager for the Korea High Speed Rail System and was the engineering manager for the Pacific Area including Alaska, Hawaii, all South Pacific Islands, and portions of Asia.

Mr. Illman has a Bachelor of Science Degree in Electronic Engineering from California Polytechnic State University. He has a patent for interference reducing enhancements to the HomePlug standard. Mr. Illman has been an active licensed amateur radio operator since 1969.

Meeting Location:
IIT's Rice Campus, 201 East Loop Road, Wheaton, Illinois.

Take Rt.56/Butterfield Rd. to first stoplight east of intersection of Butterfield & Naperville roads. Turn north onto East Loop Road (Philips 66 Gas Station on the corner); the campus will be on your right about a block north of Butterfield Road. More detailed directions and a map are available at http://www.rice.iit.edu/directions.html

Time:
6:00 Networking Time
7:00 Presentation

Reservations:
Reservations are not required.

Continuing Education:
Professional Engineers: this meeting qualifies for Professional Development Hours

Information:
The Fox Valley subsection web page is at www.ieee.org/foxvalley/

D.L.S. expands Military & RTCA Capabilities to include Lightning Induced Transient Susceptibility

D.L.S. Electronic Systems Inc. of Wheeling, IL now offers complete cable testing for RTCA DO-160 E, Section 22 Multiple Burst/Multiple Stroke Lightning Induced Transient Susceptibility for all wave forms.

For more information go to www.dlsemc.com/lightning.htm or contact Jack Black at jblack@ dlsemc.com or 847-537-6400.

Background Information
D.L.S. provides full service EMC testing to RTCA DO-160E and Mil-Std 461 A-E for the military, avionics and aerospace industries. Accredited by NVLAP, D.L.S. offers industry's largest staff of certified NARTE engineers and the largest, most up-to-date NARTE certified commercial EMC test facility under one roof – making it the best EMC testing value in the industry. D.L.S. is an approved Government Supplier – Cage Code #OKP98 with unique capabilities up to 40 GHz at 200 v/m.

D.L S. Electronic Systems, Inc.
1250 Peterson Drive
Wheeling, IL 60090
847-537-6400
www.dlsemc.com
sales@dlsemc.com

Press release written by Marilyn Sweeney, 847-537-6400.

Evening Meeting

IEEE Chicago/Rockford Consultants' Network

A Joint Affinity Group of IEEE Chicago and Rock River Valley Sections

Using Simplified Models to Simulate Complex I/O: The Importance of Balancing Simulation Speed with Model Complexity

Monday, September 26, 2005

Ray Leventhal

About the Topic:

Over 20% of simulation models now in use for high speed digital networks are now transistor level physical models (SPICE). IBIS models, designed to simulate fast, are not meeting current needs for modeling complex I/O buffers. But transistor level physical models are a poor solution because they are too much of a computation burden. The leading contenders to expand IBIS to fix the problems are macro-modeling and AMS modeling. One solution is to adapt IBIS models to include more buffer behavior so that I/Os with adaptable, adjustable drive levels and other refinements can be simulated without including too much detail.

The presentation will provide a step-by-step review of how various levels of simplification (abstraction) are applied to transistor level physical models resulting in behavioral models, macro-models, and equation-based models. Participants will see how to achieve the best speed versus accuracy trade-off of simplicity versus detail that is balanced to their needs. The session concludes with a brief introduction to Cadence Design Systems, Inc., macro-modeling templates.

Members and non-members are invited to both the meeting and the optional dinner. (Reservations are NOT required).

About the Speakers:

Roy Leventhal is an independent trainer and contractor with 45 years of engineering experience specializing in EDA modeling and simulation for signal integrity, power integrity, and EMI. Roy has a background in RF circuit design, IBIS, SPICE and Scattering-Parameter semiconductor modeling, and; device physics, component reliability, and failure analysis. He earned his BSEE/MSEE at Illinois Institute of Technology. More recently, Roy took additional post-graduate courses at the University of Wisconsin - Milwaukee, concentrating on RF and microwave subjects.

Meeting Location:

Palatine Public Library
700 North Court
Palatine, IL
847-358-1216

Dinner Location:

Bakers Square
270 E. Northwest Highway (at the corner of North Court St.), just south of the library

Time:

6:15 Optional Group Dinner at Bakers Square (Order off the menu - reservations not required)
7:30 Meeting – Presentation and Open Discussion
9:15 Adjourn

Continuing Education:

Attendance at this meeting will earn 1.0 PDH.

Information:

Information about the network can be obtained by e-mail to either consultnet@bmillerengineering.com or JAuerConsulting@worldnet.att.net, or visit our web site at http://www.drblank.com/coaction.htm

See you on September 26, 2005, and bring consultants and those who aspire to be consultants for a pleasant and informative evening of networking.

Meetings are usually held on the last Monday of odd-numbered months.

Seminar

IEEE Chicago Section

Career Planning for a Changing World

Saturday, November 12, 2005 • 8:30 a.m. – 2:30 p.m.

Embassy Suites Hotel Chicago O'Hare – Rosemont, Illinois

Meeting Location:

Embassy Suites Hotel Chicago-O'Hare Rosemont

5500 North River Road, Rosemont, IL 60018-5230 just one mile from Chicago's O'Hare International Airport, across the street from the Donald E. Stephens Convention Center and only twelve miles from downtown Chicago

Cost:

Register early and save!

Before September 15th: members $55, non-members $75, & students $35 - lunch included

After September 15th: members $75, non-members $95, & students $40 - lunch included

Program:

Career Planning 8:30 to 10:00 am
Keynote

Changes in the world economy have caused companies to change their hiring philosophies. Gone are the days of lifetime employment. Each individual must take control of his/her career. This seminar will provide you the information to…

- Take responsibility for your career (Don't wait for others to do it for you.)
- Develop goals for your own self-development
- Separate your job from your career
- Become a continuous learner
- Provide tips on how to become a good networker

Break 10:00 to 10:15 am

TRACK 1 - Enhancing Your Career 10:15 to11:45 am
Preparing yourself for the jobs of tomorrow

The world economy is improving at the expense of the US economy. US companies are taking advantage of lower labor rates in India, China and Russia to subcontract routine engineering activities. How can we, as engineers protect our careers against off-shoring?

This session will provide you with:

- What jobs have gone oversees and what types of jobs are not likely to return?
- What can you offer that the competition (overseas) cannot?
- What types of jobs are increasing?
- What types of jobs probably won't be eliminated?
- What is your best move going forward?

Lunch 11:45 to 12:15 pm

Marketing your ideas 12:15 to 1:30 pm
Communicating with non-technical people

To become a good leader, you must be able to get information across to many levels and various backgrounds of people. This presentation will help you understand the following:

- How to understand what my audience is looking for.
- How to clarify for myself what I want.
- How to deliver the message effectively.
- How to ensure the message has been understood.

Effective Technical Presentations 1:30 to 2:30 pm

As an engineers career progresses, presentation skills are essential. You must be effective at selling ideas, helping others to see your point of view & seeking assistance. This presentation will help you understand:

- How to get your idea across in a clear and concise manner.
- How to use visual aids effectively.

TRACK 2 - Changing Careers 10:15 to 11:45 am
From Corporate to Entrepreneur - (Focus on Engineering Professionals)

Starting your own business sounds like a lot of fun. But what are the pitfalls you might encounter?

- What things do you need to think about before jumping in?
- How to prepare a business case?
- How to handle the, I'm either looking for work or working cycle.
- How do I manage risk?

Lunch 11:45 to 12:15 pm

Protecting Your Intellectual Property 12:15 to 1:30 pm

The better your idea, the more likely it will draw the attention of your competitors. How can you communicate ideas with customers, suppliers, financiers, etc without giving away the store? This presentation will guide you as to how to protect your intellectual property.

- How to speak about your idea.
- What is a confidentiality agreement?
- What about patents and copyrights?
- Can I publish a technical paper and still retain rights?

Time/Goal Management 1:30 to 2:30 pm
(Managing your start-up)

Time is a precious resource that cannot be replenished.

Things you should learn:

- What is time management assessment?
- What are time wasters?
- What are time savers?
- How to set practical goals?
- How to prioritize and focus on the high payoff activities

Registration continued on next page…

Career Planning for a Changing World
Saturday, November 12, 2005 • 8:30 a.m. – 2:30 p.m.
Embassy Suites Hotel Chicago O'Hare – Rosemont, Illinois

Registration

Meeting Location: Embassy Suites Hotel Chicago-O'Hare Rosemont

5500 North River Road, Rosemont, IL 60018-5230

Date: Saturday, November 12, 2005 Time: 8:30 a.m. - 2:30 p.m.

Cost: Before Sept 15th: IEEE members $55, non-members $75, students $35
After Sept15th: IEEE members $75, non-members $95, students $40

Fax or mail this form with payment to: IEEE, 4513 LINCOLN AVENUE, SUITE 213, LISLE, IL 60532-1290 USA; FAX: (630-241-0142)

Name: Title:

Company Name:

Address:

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Circle your preference: Track 1 or Track 2 (Space is limited so register early)

For more information call: 1-800-898-IEEE

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