

SCANFAX

January 2004

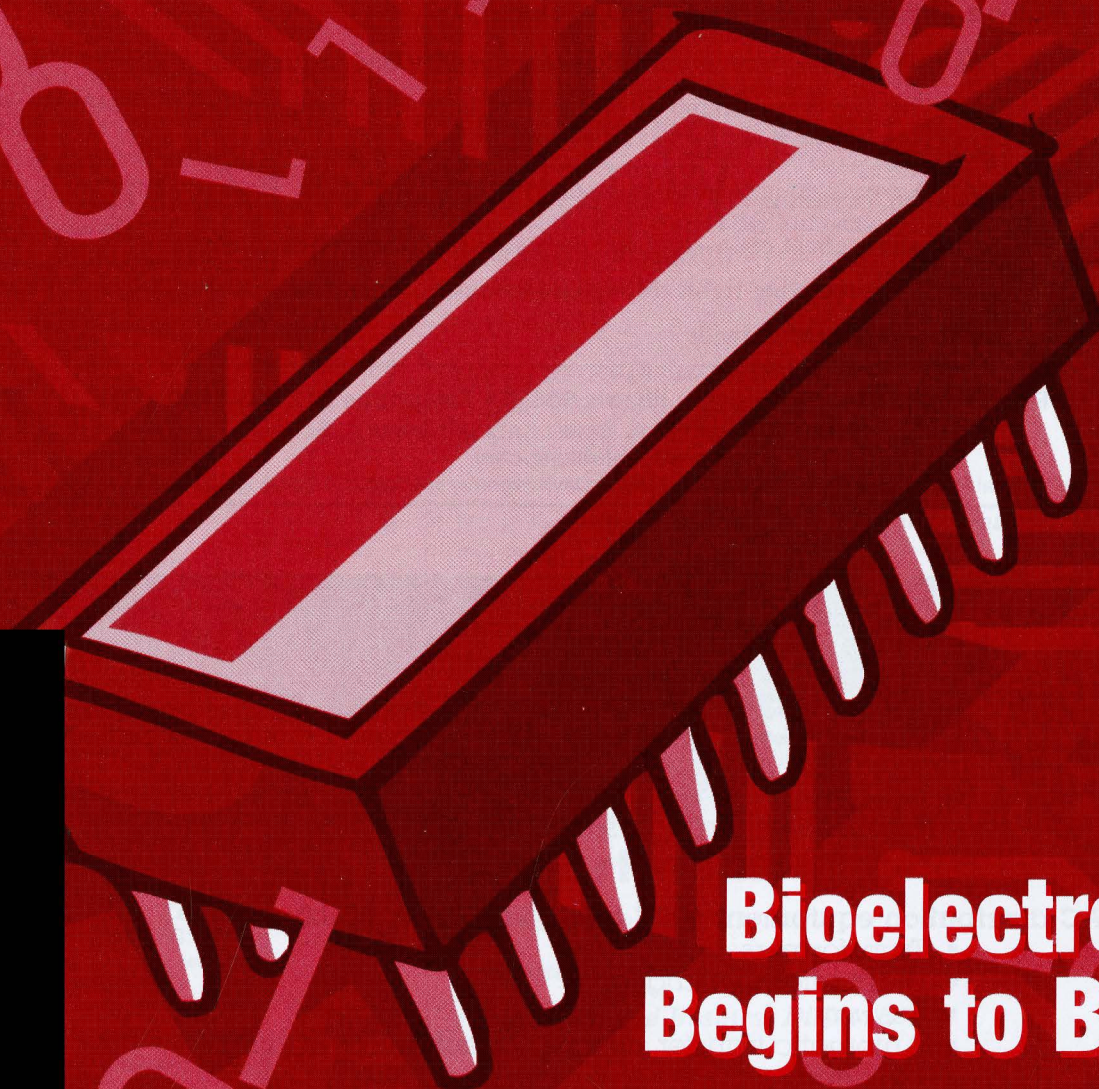
Volume 56, Issue 1



IEEE

Chicago Section Website:
www.ewh.ieee.org/r4/chicago

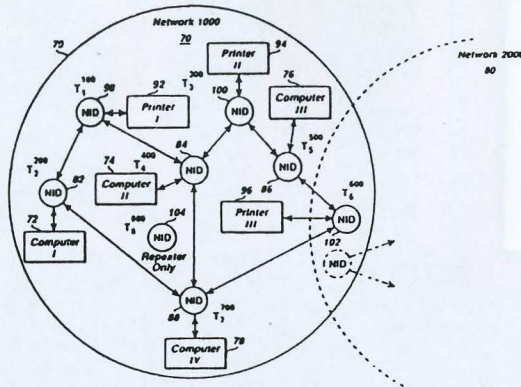
A publication of the
Institute of Electrical & Electronics Engineers
— Chicago Section —



Bioelectronics Begins to Bloom

Using the processes of
living organisms to build
electronic devices

U.S. POSTAGE PAID
NON-PROFIT ORG
Permit No. 53
Columbus, Wisconsin



Masters of the Intellectual Property Maze®

Attorneys experienced in virtually every scientific and engineering discipline and concentrating in all facets of intellectual property law including

litigation, licensing, **WELSH & KATZ, LTD.** negotiation, client counseling and corporate identification programs, as well as protecting rights through trade secrets, patents, trademarks and copyrights worldwide.

120 S. Riverside Plaza • 22nd Floor • Chicago, Illinois 60606 • Telephone 312-655-1500 • Fax 312-655-1501

IEEE MEMBER CONTACTS: A. SIDNEY KATZ AND JAMES A. SCHEER

www.welshkatz.com

Washington Office: Crystal Plaza One • Suite 206 • 2001 Jefferson Davis Highway • Arlington, Virginia 22202-3603 • Tel: 703-415-4777



Weldy/Lamont & Associates

Manufacturers Representative
Engineered Products and Services

AC distribution equipment 600V thru 35KV (50 or 60Hz)

- Transformers
- Distribution switchgear
- Busway
- Automatic transfer switches (mechanical and static)
- Metering

DC power systems

- Switching Controlled Ferro, Mag-amp and SCR rectifiers
- DC to AC inverters
- Free standing rack systems
- Batteries

Critical AC power systems

- UPS Systems — Single and Three Phase
- Power Distribution Units
- Static Switches
- Generator Paralleling Switchgear

Weldy/Lamont Assoc., Inc. / 1008 East Northwest Hwy, Mount Prospect, IL 60056 / 847-398-4510



Chicago Section:
www.ewh.ieee.org/r4/chicago

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

Chairman

Angeline Schaefer

Phone: 312-960-8329

Fax: 312-827-8329

E-mail: aschaefer@owpp.com

Editor

Gerry Ryan

Phone: 708-445-7537

Fax: 708-445-7538

E-mail: gerryr_idcs@ameritech.net

Published for IEEE by
Slack Attack Communications

Publisher

Barbara Slack

Advertising Sales

Beth Vander Grinten

Phone: 608-222-7630

E-mail: bethv@slackattack.com

Printed By

Town & Country Printers

Columbus, WI

SCANFAX (ISSN #0018-1297) is a monthly publication (except June, July and August) of the Chicago Section Institute of Electrical and Electronics Engineers, Business Office, c/o Western Society of Engineers, 28 East Jackson, Suite 1320, Chicago, IL 60604, (800) 898-4333 or (312) 253-4333. It is published by **Slack Attack Communications**, 5113 Monona Drive, Madison, WI 53716, (608) 222-7630. Printing is by **Town & Country Printers**, Columbus, WI 53925. 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

©Copyright 2004 by the Chicago Section Institute of Electrical and Electronics Engineers. Permission to reprint must be secured in advance of publication and credit given to author and SCANFAX.

SCANFAX

January 2004

Volume 56, Issue 1

Features

- 4 Bioelectronics Begins to Bloom
Using the processes of living organisms to build electronic devices
- 6 Bion Joseph Arnold Biography

Upcoming Events

- 7 **IEEE Communication/Computer Society Chicago Chapters (Joint with IEEE Fox Valley Subsection)**
Challenges in Wireless LAN
Monday, January 12, 2004
- 7 **IEEE-IAS/IES Dinner Presentation**
Microturbine Application
Wednesday, January 21, 2004
- 8 **IEEE Fox Valley Subsection and IIT-Rice Campus**
The Professional Engineer License
Wednesday, January 21, 2004
- 8 **IEEE Chicago/Rockford Consultants' Network**
(A joint Affinity Group of the IEEE Chicago and Rock River Valley Sections)
Finding a Job in a Changing Workforce
Monday, January 26, 2004

Departments

- 9 *Upcoming Events*
- 10 *Advertiser Index*
- 10 *Professional and Business Directory*

CHICAGO SECTION EXECUTIVE COMMITTEE MEETING

Tuesday, January 13, 2004, 7:00 p.m.

DeVry DuPage, Room TBA, 1221 N. Swift Rd., Addison, IL

No Registration Needed

Statements or opinions expressed herein are those of the author's and not necessarily those of the IEEE Chicago Section, its members, officers, or staff, or the editors of this publication. Readers using any information or materials described in this publication do so at their own risk. In no event will IEEE Chicago Section, its members, officers, or staff be liable for any damages resulting from use of this material and hereby expressly disclaim such liability. The publication of any advertisement is not to be construed as an endorsement of the product or service offered unless the advertisement specifically states that there is such an endorsement or approval by the organization.

Bioelectronics Begins to Bloom

Using the processes of living organisms to build electronic devices

By Paul Zukowski

The passage of electrons is shared by both organic and inorganic entities. A nerve cell and its axons are, after all, very much like a printed circuit in their ability to transmit a signal and process it. The ability of living cells to fix crystals of minerals could be exploited to actually build circuitry.

Many researchers are exploring the frontier between microcircuits and microbiology, resulting in fascinating combinations of the living and nonliving realms.

At the University of Glasgow, the Bioelectronics Research Centre investigates the interface between biological and electronic systems, particularly at or below the micrometer scale. They identify three aspects of bioelectronics that are challenging from an electronic engineer's point of view: biological sensing, biological microcircuits and bioelectronic information storage.

The development of biosensors, small diagnostic devices, involves modifying a transducer surface (an electrode or a wave guide) with a biological molecule such as an enzyme or an antibody so that any degree of molecular recognition between the biological molecule and a sensed species can be communicated as a signal. One project is looking at the molecular basis for electron transport processes between certain proteins and metal surfaces.

Glasgow researchers have found that biological molecules can be incorporated into conducting polymer surfaces to provide a possible way to localize proteins at a microelectrode. Thus a bioelectronic interface may be created with molecular wires between the electrode and the biomolecular material.

A group in Israel is using a property of DNA to create field effect transistors, it was reported in IEEE Spectrum. At the Technion-Israel Institute of Technology in Haifa, they are using the ability of one strand of DNA with a certain sequence to attract and bind another strand having the matching sequence to bind a series of biomolecules to predetermined spots on a substrate.

These biomolecules then fasten carbon nanotubes in place from solution. They can then make electrodes by plating the ends of the nanotubes with gold in a room-temperature chemical process, producing a field effect transistor. The Technion scientists plan to improve the process until they can build complete circuits.

Bioelectronic devices can also be active. According to an article in The Scientist (March 18, 2002), the hinge-bending motions of a certain bacterial protein are being used to switch an electronic current on or off. The work is being done at Duke University Medical Center in Durham, N.C., by Homme Hellinga, associate professor of biochemistry, and colleagues.

Hellinga's group has constructed a family of four bioelectronic sensors with different capabilities. Two detect sugars, one detects the amino acid, and another detected zinc ions. The protein bends away from the electrode when it binds to the target chemical, interrupting an electrical signal. The resultant decrease in current is proportional to the concentration of the target chemical in the solution.

Finally, scientists at the Massachusetts Institute of Technology have genetically engineered a virus to coat itself in a crystalline semiconductor sheath, then locate and bridge two electrodes to form the critical part of a field-effect transistor. This is called biological self-assembly, and it makes use of the complex molecular structures that living creatures have evolved the ability to produce.

Using a process similar to the way shellfish crystallize their shells, certain viruses produce proteins that can crystallize semiconductors and bind them to metals. While this is being used at first to attach a few nanodevices to ordinary silicon circuitry, the future could be fabrication methods using genetically engineered microbes to build compete nanoscale circuits.

The work in bioelectronics is not limited to universities. A report by Gargi Talukder published in September 2002 stated that there are over 150 companies currently working in the biosensor and bioelectronics arena. They are developing the technological capability to utilize biological materials in the establishment of sensors and circuitry.

For example, San Diego-based GeneOhm Science Inc. is exploiting the ability of duplex DNA to conduct electrical currents in building detectors for the unique DNA sequences that identify individuals, called single nucleotide polymorphisms (SNPs). Synthetic DNA probes corresponding to mutational SNPs are attached to a gold electrode. In a solution, a DNA-based chemical acts as an electron acceptor when current flows from the electrode. Normal DNA allows optimal current

flow while SNPs result in a readily detected abatement of current. GeneOhm has implemented this technology in a microchip-based platform.

Motorola Inc. has developed the eSensor DNA detection system at its Life Sciences division in Pasadena, Calif. The system engages two DNA probes, one to capturing and immobilizing the target to the electrode surface, and the other to send a bioelectronic signal. Two medical groups are using the eSensor to investigate hereditary disorders.

Toshiba Corp. has developed an electrochemical DNA chip for the SNP typing of patients infected with hepatitis C. These chips are be used to identify patients most likely to respond to therapy. A gold electrode with DNA sensors attached is used, and an electrochemically active dye that specifically binds to the target molecules. When an appropriate potential is applied, the oxidative current from the dye is proportional to the amount of bound target DNA.

It seems evident that the meeting of biology and electronics on the micro and nano scale holds considerable promise for new ways to make circuits and devices.

For more information, Biosensors & Bioelectronics is the principal international journal devoted to research, design, development and application of biosensors and bioelectronics. It is an interdisciplinary journal serving professionals with an interest in the exploitation of biological materials and designs in novel diagnostic and electronic devices including DNA chips, electronic noses and micro total analysis systems. ■

Partners in U.S. Safety

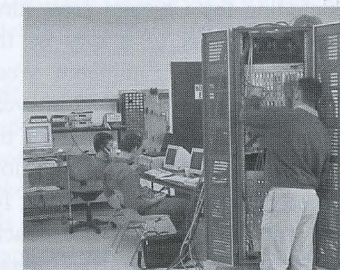


*Faster, less expensive
U.S. safety certification
in Chicagoland*

D.L.S. Electronic Systems, Inc., a Wheeling, IL facility, has expanded its CSA services to include CSA_{NRTL} for the United States. Their new streamlined program provides U.S. Safety Compliance equivalent to UL and other NRTL safety marks, in addition to the Canadian Safety Compliance CSA has long been noted for.

CSA Safety Certification through D.L.S. offers you certified testing much faster than you ever imagined, at significantly less cost, with our "quality comes first" approach. Our full-time engineering staff is ready to step in with problem solving experience, when needed, implementing practical solutions.

Isn't it time you switched your NRTL requirements to an organization dedicated to you, the customer? There is no need for you to pay more while settling for less than the best. Make D.L.S. and CSA your partners in Safety.



For more information check out our web site at www.dlsemc.com and click on the bright red CSA Banner.



MARK THIS HISTORIC DATE!

Special Chicago Section Meeting

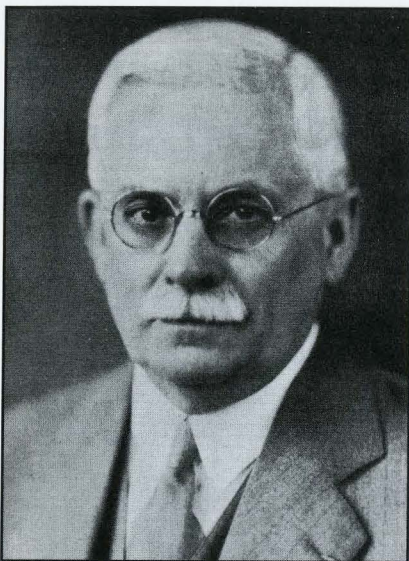
Join us in celebrating the 110th anniversary of the Chicago Section's inaugural meeting originally held at the Armour Institute. Dine on a 21st century dinner. Visit the simulated lecture room of Professor Stine. Enjoy a reenactment of the meeting that was held on March 21, 1894. This historic event occurs in the new campus center at IIT on March 23rd, 2004.

McCormick Tribune Campus Center
Illinois Institute of Technology

110
Years

1894-2004

Sponsored by the Chicago Section Executive Committee



Bion Joseph Arnold

Lewis Institute, and after the consolidation of Armour and Lewis, he became a trustee of Illinois Institute of Technology.

It was during the World's Columbian Exposition of Chicago in 1893 that Mr. Arnold's ambition as an engineer and an inventor first attracted general public attention. Here he was an engineer for the Intramural Railway which first used the third rail and which was the first elevated electric railway in this country. That was in the era when horse cars and cable cars were still employed.

From this time on Mr. Arnold was very active in electric transportation. In 1902 the city of Chicago commissioned him to study the traction problem of the entire municipality. This was followed by the rebuilding of all the surface lines and the installing of an all-electric unified system. The city created a board of supervising engineers to oversee the operation of the revised system, and Mr. Arnold was elected Chairman of this Board. He was also appointed Chief Subway Engineer and made comprehensive plans for subways in Chicago's downtown district.

Mr. Arnold was aware of this obligation to professional and scientific societies and

was an active member of several such associations. In turn these societies acknowledged his ability. As evidence of this he was elected President of the American Institute of Electrical Engineers; he served also as President of the Western Society of Engineers. He was a delegate to the International Electrical Congress in Paris. The dedication to his work was exhibited by receiving the Washington Award in 1929 for outstanding contributions in electric transportation. Mr. Arnold was now known as "Father of the Third Rail."

He, too, recognized his obligation to his country. During the First World War, he served as Lieutenant-Colonel in the aviation section of the Signal Corps. He was in charge of airplane production, but also carried out other assignments in the Army and Navy, including a study of the requirements for aluminum production for aircraft, aerial torpedoes and landing field construction.

Mr. Arnold died January 29, 1942. He will be remembered most for his approach in solving problems which led to his successes in engineering.

References: Illinois Institute of Technology, Western Society of Engineers. ■

One of the signers of the petition to have local AIEE meetings in Chicago was Bion Joseph Arnold. Born in Casnovia, near Grand Rapids, Michigan, August 14, 1861, he graduated from Hinsdale College, Michigan, with a B.S. in Electrical Engineering in 1884 and an M.S. in 1887.

In later life his important professional record was recognized by an honorary degree of doctor of science awarded by Armour Institute of Technology. Throughout the years Mr. Arnold continued his interest in education; he was a trustee of

2004 Future City Competition Underway!

This nationwide contest asks Chicago regional seventh and eighth-graders to design and build cities of tomorrow. For the past eleven years, junior high and middle school students from across the country, including the Chicago area, have designed their versions of a city of the future for the National Engineers Week Future City Competition™. This year Chicago is getting an early jump on the contest. In preparation for the competition, Don Wittmer, Regional Coordinator for Chicago, is requesting Chicago area teachers and engineers to demonstrate an interest in the program. Many of the schools that have participated in the program in prior years have now incorporated the Future City Program into their science curriculum.

The non-profit competition asks seventh and eighth graders to design — first on computer, then in large three-dimensional models — a city of the future. The students work with their teacher and a volunteer engineer mentor from the community.

Though they may sound like a fantasy, the designs are far from pie in the sky. The students must take into account real city problems such as pollution, crime, traffic, and unemployment and then solve them. Students from the Chicago area will begin work on their future cities in September, and will compete in regional finals on January 24, 2004 at the University of Illinois - Chicago.

The area's first place team wins a trip to Washington, D.C., for the national competition to be held during National Engineers Week™, February 22-28, (National Engineers Week www.eweek.org is always celebrated around the time of George Washington's birthday, since, as a surveyor, he was one of the nation's first engineers).

More than 30,000 students from 1040 schools in 31 regions participated in the 2003 competition. It is sponsored by the National Engineers Week Committee, a consortium of engineering associations and major U.S. industries. Co-chairs of the 2004 National Engineers Week are The

Institute of Electrical and Electronics Engineers (IEEE) and Fluor Corporation.

Regional first place teams receive a free trip to Washington, D.C. for the national finals during National Engineers Week. Prizes for the 2004 competition winning Future City team include a free trip to U.S. Space Camp in Huntsville, Alabama. Other prizes include scholarships, computers and savings bonds. In addition, teams will be eligible for special awards and recognition sponsored by engineering societies and other organizations.

For the 2004 Chicago Regional Future City Competition, or engineers interested in volunteering as mentors or judges should contact Don Wittmer, Chicago regional coordinator, at (312) 930-9119 or via e-mail at dwittmer@hntb.com.

More information on the competition can also be found at the Future City Competition home page at <http://www.futurecity.org>. ■

EVENING MEETING

IEEE Communication/Computer Society Chicago Chapters (Joint with IEEE Fox Valley Subsection) **Challenges in Wireless LAN** Monday, January 12, 2004

Dr. James Yu, DePaul University

About the Topic:

Wireless LAN is one of the fastest growing areas in network technologies. Its popularity increases its application domains, along with many challenging issues. This talk covers three issues facing the WLAN industry: security, quality of service, and IP mobility. The talk starts with a brief introduction of 802.11 (at the MAC layer), and discusses the problems of security, QoS, and mobility in the current standard. The new draft standards, 802.11i for security and 802.11e for QoS, are presented to address these issues.

About the Speaker:

Dr. James T. Yu is an Assistant Professor at DePaul University where he is teaching and researching in the areas of wireless LAN, Fault Tolerant LAN, and Voice over IP. He was the director of Network Technology at ARBROS Communications, responsible for

network architecture, design, and management. He had 15 years of experience at Bell Labs working on switching development and information technology projects. He received the MS and Ph.D degrees in Computer Sciences from Purdue University.

Location:

IIT Rice Campus, Room 166.

Directions:

The IIT Rice campus is on the northeast corner of the junction of East Loop Road at Butterfield Rd. The intersection is about 3 miles west of IL 355 and IL 53
Map: <http://www.rice.iit.edu/directions.html>.

Time:

6:30 PM Social (Free snack and beverages),
7:00 PM Presentation

Sponsorship:

IEEE Communication Society Chicago Chapter, Computer Society Chicago Chapter and IEEE Fox Valley Subsection.

Cost:

There is no charge for attending the seminar.

Reservation:

Reservations are not required, but registering your intent of attendance at ieechi@yahoo.com is greatly appreciated.

For More Information:

Visit IEEE Chicago Section website at: <http://www.ewh.ieee.org/r4/chicago/>, or contact: Yigang Cai ycai@ieee.org or Jack Sherman j.sherman@ieee.org, Jerry Kattke g.kattke@ieee.org, or Joe Weesner joe.weesner@ieee.org

EVENING MEETING

IEEE-IAS/IES Dinner Presentation **Microturbine Application** Wednesday, January 21, 2004

Stephen Hillman, Elliott Energy Systems

About the Topic:

Microturbines have fascinated the technical community for many years and have recently reached true commercial feasibility. This presentation will cover the basic design of microturbines, provide illustrations of successful applications and an understanding of the economics of cogeneration. Attendees will gain a fundamental understanding of the how to apply this efficient, environmentally clean technology to solve today's energy problems.

About the Speaker:

Mr. Hillman is a native of Indiana and a graduate from the Rose-Hulman Institute of Technology with a Bachelors of Science in Mechanical Engineering. He later earned an MBA in marketing from Arizona State University. Mr. Hillman has over 30 years of experience in creating and marketing products for the aerospace and

automotive industry. Prior to joining Elliott, he worked for 22 years in a variety of product management and strategic marketing positions with Honeywell, Inc. In his previous position, he was responsible for all marketing strategy of a \$600 million product line.

Location:

Costa's (Greektown)
340 S Halsted St.
Chicago, IL

Time:

5:30 PM Social
6:00 PM Dinner
7:00 PM Presentation

Directions:

Costa's is located in Greektown on the corner of

Van Buren and Halsted. See www.iaschicago.com for detailed directions and a map.

Cost:

Includes the presentation and a four-course dinner with a choice of the main entree - Roast lamb, Chicken, or Fish. (Vegetarian or special dietary meals available). Cost is \$25 IEEE Member and \$30 non-member. Valet parking is included.

Reservations:

Call the IEEE Business Office at (800) 898-IEEE with your reservation. Please note any special meal requests at the time of the reservation. You can also make your reservations on line at www.iaschicago.com. Note: For P.E. licenses that require continuing education for renewal, attendance at this meeting is acceptable as one Professional Development Hour (PDH) per meeting.

EVENING MEETING

IEEE Fox Valley Subsection and IIT-Rice Campus The Professional Engineer License Wednesday, January 21, 2004

Irwin Smiley, PE, FNSPE, Consoer Townsend Envirodyne Engineers, Inc. (CTE)

About the Topic:

This talk will discuss the importance and reasons for electrical engineers to become registered. It will cover the academic and job experience requirements to sit for the PE examination, as well as the new PE renewal requirements.

About the Speaker:

Irwin Smiley has 38 years experience in electrical engineering, process and instrumentation engineering, and energy studies. He has supervised the design of government, institutional, industrial and commercial buildings, water treatment plants, standby power systems, wastewater treatment plants, moveable bridges, airports, roadway lighting, electrified train facilities and power generating stations. He has

his P.E. license in Illinois and 19 other states. He was a past State President of the Illinois Society of Professional Engineers (ISPE) and was past Chairman of the IEEE Chicago Section.

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 (Grady's Restaurant and Phillip's 66 Gas Station on the corners); 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>.

Sponsorship:

IEEE's Fox Valley Subsection and Illinois Institute of Technology's Center for Professional Development (Rice Campus).

Time:

6:00 PM Networking Time
7:00 PM Presentation

Reservations:

Reservations are not required.

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

EVENING MEETING

IEEE Chicago/Rockford Consultants' Network (A joint Affinity Group of the IEEE Chicago and Rock River Valley Sections) Finding a Job in a Changing Workforce Monday, January 26, 2004

Thomas E. Hanna, Zebra Technologies Corporation

About the Topic:

Unemployment is up, current employees are burned out, downsizing is prevalent, morale and loyalty are on the decline. But take heart; people are still finding jobs, it just takes longer. So how do I find a job? Tom Hanna, Staffing Consultant with Zebra Technologies, will give a presentation focusing on some of the best techniques used to find jobs, including networking, internet resources, search firms, career fairs, and classified advertisements. The important aspects of writing effective resumes and cover letters will then be discussed. Finally, the interview is critical. Some of the do's and don'ts of conducting professional interviews will be presented. Consultants face the same challenges as those seeking full time employment: finding potential clients, presenting a professional image, and convincing the client to hire them. If you are a consultant or prospective consultant seeking jobs and/or clients, please join us for this very timely presentation and discussion.

Members and non-members are invited to both the meeting and the optional dinner.

About the Speaker:

Thomas E. Hanna, currently Staffing Consultant at Zebra Technologies Corporation, Vernon Hills, IL, is a Human Resources professional with experience in the automotive, telecommunications, IT, plastics, software, and instrumentation industries. He is an experienced manager and leader with a reputation for common sense problem solving and relationship building. He is viewed as a dependable, trusted confidant to both senior management and the employee population. Tom has extensive experience in recruitment, employee relations, compliance and policy development.

Meeting Location:

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

Dinner Location:

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

Time:

6:15 PM Optional Group Dinner at Bakers Square (Order off the menu – reservations not required)
7:30 PM Meeting – Presentation and Open Discussion
9:00 PM Adjourn

Information:

Info about the network can be obtained by e-mail to either ben@benmillerengineering.com or JAuerConsulting@worldnet.att.net, or visit our web site at <http://www.drblank.com/coaction.htm>. See you on January 26, 2004, 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.

Upcoming Events!

Computer & Network Security Workshop & Expo

Thursday, February 26, 2004

8:30 AM-9:00 AM –
Registration/Networking
9:00 AM-5:00 PM –
Security Workshop & Expo
5:00 PM-6:00 PM –
Reception/Social Hour
6:00 PM-9:00 PM –
Engineers Week Speaker's Forum

Sponsorship: IEEE's Fox Valley Subsection and Illinois Institute of Technology's Center for Professional Development (Rice Campus)

About the topic: Illinois Institute of Technology's Center for Professional Development (IIT/CPD) and the Institute of Electrical and Electronic Engineers (IEEE) are sponsoring a one-day Security Workshop and Expo at IIT's Rice campus in Wheaton Illinois.

This workshop will bring together knowledgeable security practitioners and responsible executives from organizations such as security providers and manufacturers, scientific laboratories, law enforcement, medicine, and legal organizations to discuss and share their security needs, problems, technologies, security systems, plans and much more.

Location: IIT's Rice Campus, 201 East Loop Road, Wheaton, IL

Directions: The IIT Campus is a block north of the northeast corner of the junction of East Loop Road at Butterfield Road. The intersection is about 3 miles west of IL 355 and IL 53. Directions are available at <http://www.rice.iit.edu/directions.html>

Cost: \$35 (\$20 for students) includes registration, materials, Continental breakfast and lunch

Reservation: Advance registration is required. Space is limited, so reserve your seat by contacting Janet Reif, Manger of Professional Learning, at (630) 682-6035 or reif@iit.edu. Reservations and payment is due by Tuesday, February 17, 2004.

For more information: For additional details, please visit www.cpd.iit.edu/securityworkshop.html or contact Janet Reif at (630) 682-6035 or reif@iit.edu.

DuPage Area Engineers Week 2004: Engineering Anniversaries

Join Us in Celebrating our
20th Anniversary

Thursday, February 26, 2004

6:00 PM - 9:00 PM –
Speaker's Forum

Saturday, February 28, 2004

12:30 PM - 5 PM –
DuPage Engineers Expo

About the Topic: What are important engineering and scientific advances? When did they happen? How do they relate to what is happening in the same fields today? These are some of the questions we will try to answer at the DuPage Area Engineers Week celebration, held each year during National Engineers Week, February 22-28, 2003. This year we are celebrating our 20th anniversary, and we ask the community to celebrate with us as we recognize various scientific and engineering advances over the years.

The Thursday evening Speaker's Forum on February 26 is in conjunction with a Security Workshop and Expo being held that day. While the speaker has not yet been announced,

the talk will focus on computer security from a layperson's point of view. Let our expert tell you how to protect yourself. This even will be preceded by an informal super.

The Saturday event, February 28, is free and open to the public from 12:30 to 5:00 PM and features interactive displays and presentations. All presenters will be celebrating one or more anniversaries particular to their society or discipline. Displays this year include aviation science, cryogenics, polarized light, and safety as well as the Rube Goldberg contest and hands-on SciTech activities. The Rube Goldberg competition is sponsored by ASME for middle-school students (grades 6-8). Rube Goldberg was a cartoonist in the 1930's and 40's who devised unique and complicated approaches for performing simple tasks such as cracking an egg. In honor of Goldberg's ingenuity, the ASME competition works with students to create a device that performs a specific task using the most unique approach. The resulting constructions are displayed at the Engineers Week program. The event is free, open to the public and great fun for the entire family.

Location: Illinois Institute of Technology's Rice Campus, 201 East Loop Road, Wheaton IL 60187

Sponsorship: Illinois Institute of Technology's Rice Campus, IEEE Fox Valley Subsection. Other professional engineering societies

For more information: Visit our Web site at www.rice.iit.edu/engineersweek/ or contact Barbara Kozi at kozi@iit.edu or 630.682.6040. IIT's Rice Campus is located at 201 East Loop Road, Wheaton. For more information on the DuPage program, visit the program's web site at <http://www.rice.iit.edu/engineersweek/> or call 630.682.6040. ■



PROFESSIONAL AND BUSINESS DIRECTORY

Transportation Engineering • Water Resources Engineering

CTE ENGINEERS
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.
303 East Wacker Drive, Suite 600, Chicago, Illinois 60601
(312) 938-0300 www.cte-eng.com

ELECTRONIC INSTRUMENT ASSOCIATES

Chicago 630-924-1600 • Milwaukee 262-677-1600
Manufacturer's Representative info@electronicinstrument.com

Electromagnetic Compatibility Test Equipment
Power Amplifiers, Transient Generation Equipment, Shielded Rooms,
Anechoic Chambers, EMC Antennas, Turntables, Field Probes, etc.

Electrical Parameter Measurement Instrumentation
AC & DC Current, Voltage, Watt, VAR Transducers, Sensors, Signal
Conditioning, Energy Monitoring Instruments, Demand / Submetering

LEE BUTTER & ASSOCIATES
ELECTRICAL MANUFACTURERS REPRESENTATIVES
20 S. LIVELY BLVD. Phone (847) 437-7600
ELK GROVE, IL 60007 Fax (847) 437-7609
lee_butter@yahoo.com

LEHMAN COMPANY
Electrical Manufacturers Representative
PHONE: 630-942-1900 FAX: 630-942-1955

PANATROL
Automation and Controls
www.panatrol.com
info@panatrol.com
7481 S. Sayre Ave. • Bedford Park, Illinois
Phone: (708) 496-3080 • Fax: (708) 496-0426
• Engineered Factory Automation
• PLC and Computer Programming
• Electrical Design and Drawings
• Custom Control Panels U/L Listed
• Motor Controls CSA Certified

Joseph L. Bolsinger
Territory Manager
S&C ELECTRIC COMPANY
Specialists in Electric Power Switching and Protection
Chicago Sales Office (630) 516-9076
Fax: (773) 381-4849
E-mail: jlbolsinger@sandc.com
Web: www.sandc.com
S&C Inside Sales
6601 North Ridge Boulevard
Chicago, Illinois 60626-3997
(888) 762-7700
Fax: (773) 381-4893

STANDBY POWER SYSTEM CONSULTANTS, INC.
77 W. 61st Street, Westmont, IL 60559
Phone: (630) 769-1138
Fax: (630) 769-1174
www.standbypowersys.com
Stationary Battery and DC Power System Services & Sales
Testing - Engineering - Consulting - Maintenance - Monitoring -
Installation, Removal & Disposal -
Sales - Training - Root Cause Failure Investigations -
24 hour Emergency Response & Site Restoration
Specializing in Electric Utility, Telecommunication, Switchgear,
Data Center & UPS Applications
**Residential Standby Generator & Renewable Energy
System Service and Sales**
"Our Services Come Batteries Included"
TECHNOLOGIES, INC. POWERCON DIVISION

T&D Products, Inc.
Manufacturers Representatives - Transmission & Distribution Electrical Equipment
1979 N. Mill Street Suite 103 Phone: (630) 305-9704
Naperville, IL 60563 Fax: (630) 305-9708
Web: www.tdproducts.com email: info@tdproducts.com
**Transformers, Switchgear, Breakers, Relays, Capacitors, Harmonic Filters
Electrical Buildings, Power Resistors, Non-Seg Bus, Iso Phase Bus, Batteries,
Chargers, UPS Systems, Substation Design and Supply**
ABB, Atkinson / EPSI, Calvert, Carter & Crawley, Central Electric, CGIT,
Cyberex, Hamby Young, IPC Resistors, MTI Technologies, Omniverter,
Phoenix Electric, Power Assets Recovery, Southwest Electric, Tierney

Spring Classes Start January 20
<http://online.engr.uiuc.edu/scan>
Online Graduate Programs in CS, ECE, & ME
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

**Support all of these
fine businesses that
support SCANFAX.**

ADVERTISER INDEX	
DLS Electronic Systems, Inc.	5
Elite Electronic Engineering	IBC
Illinois Institute of Technology	IBC
IIT	BC
Weldy/Lamont & Associates	IFC
Welsch & Katz	IFC



Illinois Institute of Technology

Transform your future.

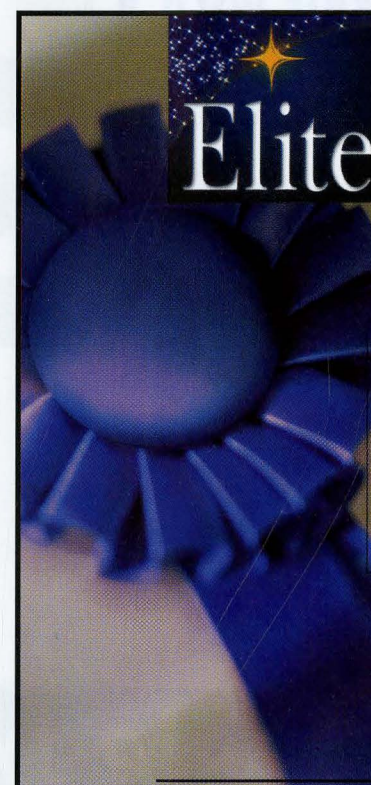
with a graduate degree or certificate from
Illinois Institute of Technology's Department of
Electrical and Computer Engineering. Our programs
combine theory with practical applications to provide
professionals with advanced knowledge and solid
academic credentials that send clear signals of future success.

Advance your career.

Graduate level courses are conveniently scheduled days, evenings and weekends, and are
available in Chicago, Wheaton and at more than 50 distance learning sites around Chicagoland.
Many courses also available online. For more information,
call 312.567.3400 or visit www.ece.iit.edu
Apply Today.

ILLINOIS INSTITUTE
OF TECHNOLOGY

Transforming Lives. Inventing the Future. www.iit.edu



Elite Capabilities.

New and different products demand new and
different testing capabilities—and Elite has them.

- Enhanced High-Intensity RF (HIRF) testing
600V/m-CW/AM and +2500V/m pulsed RF
- HALT/HASS accelerated life testing via rapid
thermal cycling and six-axis vibration
- Computer simulation of EMI using software
modeling consulting services

Visit www.elitetest.com to see how our constantly
improving capabilities can meet your constantly
changing testing needs.

Elite Electronic Engineering Inc.

AzLA Accredited
NVLAP Accredited
ANSI Accredited
DESC Approved
NARTE Certified Engineers

1516 CENTRE CIRCLE, DOWNERS GROVE, IL 60515
1-800-ELITE-11 [1-800-354-8311]
www.elitetest.com
FC Canada CE

**Our Constantly Improving
EMC Test Capabilities**

• EMC Testing Services

MILITARY AND COMMERCIAL AVIATION
600V/m-CW/AM and +2500V/m pulsed RF,
Lightning Testing, Large system capabilities

AUTOMOTIVE

DaimlerChrysler and Ford Approved,
GM Correlated, Nissan, Toyota, BMW, others
Whole Vehicle EMC Test Facility;
Truck and Ag Equipment Specialists
European Union "e-Mark" Testing for
ESA's & Whole Vehicle

FCC, CE MARK, TELECOM

Regulatory Experts; Test Experts;
EMC Design Experts
FCC Telecommunication Certification
Body (TCB)
European Union Conformity Assessment
Body for CE Mark Approvals

• Environmental Stress Testing and Electrical Safety Services

Full Environmental Stress Test Laboratory;
Temp, Humidity, Vibe, Shock, Rain, Dust,
Salt Fog, and many others

• Engineering Design Consulting Services

FCC/CE Mark Regulatory Experts,
EMC Design Analysis and EMI Suppression,
EMI Simulation and Circuit Modeling Services

Advanced Electronics
Applied Electromagnetics
Communication Systems
Computer Engineering
Control Systems
Electricity Markets
Power Electronics
Power Engineering
Signal Processing
Wireless Communications
Engineering

Do something for YOU this New Year!

Take A Short Course and.....

COMPUTING

Internet Security	ASP.NET with C#
Wireless Internet	Computer Graphics
Internet Protocol	XML for Programmers
VoIP	Dreamweaver
Java	Java Databases (JDBC)
Linux	Access
SIP	3G Wireless - CDMA
UML	ATM Based Networks

enrich

improve

advance

learn

enhance

ENGINEERING

PE-EI Exam Review
Continuing Education Units for PEs
Pro/E Mentor-1
Power Electronics
Design of Thermal Systems

Enhance yourself with a

Bachelor

certificate

&

Master

degree

Degree

Programs:

short course

LEADERSHIP & MANAGEMENT

Developing Leadership
& Management Skills
Project Management
Knowledge Management
Leadership Development
IT Project Management
Legal Issues for Civil Engineers

- Information Technology & Management
- Computer Science
- Electrical and Computer Engineering

Illinois Institute of Technology

Center for Professional Development, Wheaton IL

(630)682-6035

www.cpd.iit.edu

ILLINOIS INSTITUTE
OF TECHNOLOGY



Transforming Lives. Inventing the Future. www.iit.edu