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Official Publication of the Chicago Section • Institute Of Electrical & Electronics Engineers • October 1985

JOINT CHICAGO CHAPTER OF IEEE ANTENNAS & PROPAGATION SOCIETY AND MICROWAVE THEORY & TECHNIQUES SOCIETY

"MICROWAVE EXPOSURE SAFETY GUIDELINES
AND THEIR BIOLOGICAL RATIONALE"

BY: DR. JAMES C. LIN

Date: Monday, October 14, 1985
Place: Louis Restaurant, 351 E. Lake Street,
Addison, Illinois
Time: Social - 5:30 p.m.
Dinner - 6:30 p.m. Meeting - 7:30 p.m.

ABSTRACT

To protect the public from unnecessary exposure to potentially harmful RF radiation, a number of countries have promulgated exposure standards. These exposure standards have been based principally on the understanding that the observed and confirmed effects of RF fields on animals are related to the heat generated from the energy absorbed by the body. The author and others suggest that such exposure standards as ANSI C95.1-1982 are inadequate in that exposure to low level electromagnetic fields has been shown to produce modifications in the physiology and biochemistry of animal brains.

SPEAKER

Dr. James C. Lin received his B.S., M.S., AND Ph.D. degrees in Electrical Engineering from the University of Washington in Seattle. Presently, he is the Director of the Robotics and Automation Laboratory in the College of Engineering at the University of Illinois in Chicago, where he also serves as Professor and head of the Department of Bioengineering.

The dinner is optional. A reservation is helpful even if you plan to attend the talk only. Reservations may be made by calling 236-4609 before noon on Friday October 11. Non-IEEE members are welcome.

INDUSTRY APPLICATIONS SOCIETY/ INDUSTRIAL ELECTRONICS SOCIETY

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Wednesday, October 9, 1985
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Mr. Galle has extensive experience in evaluating, developing, and auditing quality control systems for the auto, electrical, chemical, plastic, metal fabricating, and food industries. He is a senior member of ASQC, past-chairman of its Food Drug & Cosmetic division, and a member of the American Statistical Association (ASA), the American Production and Inventory Control Society (APICS), and is a licensed professional engineer.

Schedule: 5:30 Cash Bar
6:15 Dinner
7:15 Technical
Program

Location: Mr. Peters Rest.
1018 Mt. Prospect
(Rand & Central)
Mt. Prospect, IL

Reservations:

Please call Eleanore Burda, 236-4609 to make dinner reservations by Monday, October 7. The cost for dinner is \$12 for IEEE and ASQC members, \$13 for non-members. There is no charge for anyone wishing to attend only the technical program.

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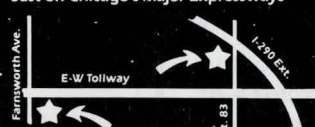
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Unless otherwise specified, Chicago Section IEEE neither endorses nor sanctions any positions or actions espoused in SCANFAX.

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979-3627

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979-5824

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IEEE Office
(312) 236-4609

Change of Address

Send change of address to Roseann Schultz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

Professional Activity

UPDATE

On of the things each of us can do to show we are really willing to participate in the improvement of our organization, is to vote in the coming IEEE election. We have the ballots, it is a simple matter to mark and mail them - NOW!

For those who mistakenly feel their vote doesn't matter, we have only to look at the last election where Jose Cruz from our area lost the Presidents position by a mere 300 votes.

Take time now to mark and mail your ballot. All the candidates are capable, dedicated IEEE officers whose offer to serve should be reciprocated with a large number of votes.

CALENDAR OF EVENTS

For reservations call the IEEE office 236-4609
(unless otherwise indicated)

Copy Deadline for November Scanfax is Sept. 27

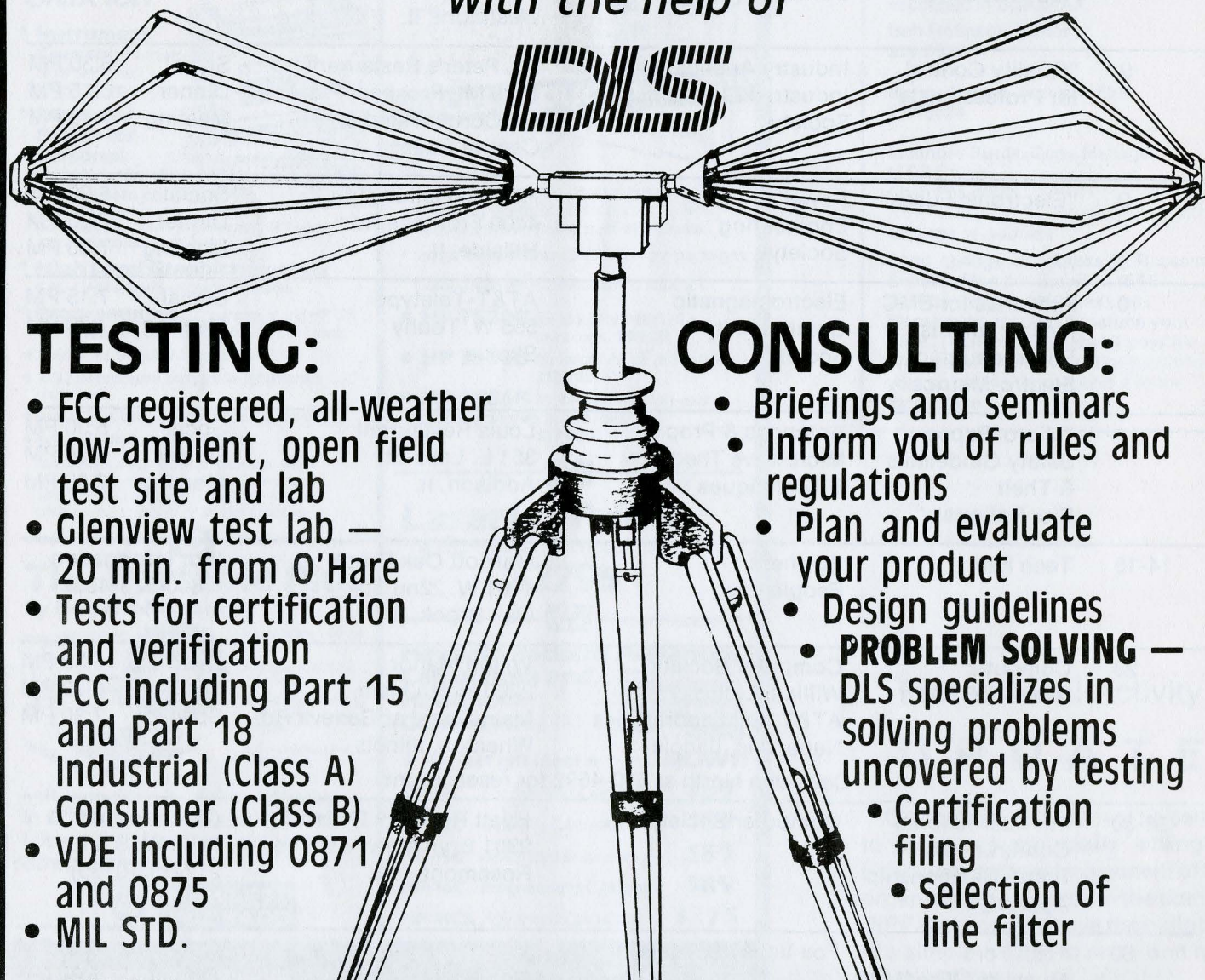
OCT. 7-11	COMPSAC '85	Computer Society	Americana Congress Hotel 520 S. Michigan Avenue Chicago, IL	(For information Stephen S. Yau, 491-3641)
7-9	NCF85 - National Communications Forum	National Engineering Consortium	Ramada Hotel O'Hare 6600 Mannheim Rd. Rosemont, IL	(For information Bob Janowiak, 828-0491)
8	Monthly Meeting ALL WELCOME	IEEE Executive Committee	Allen-Bradley Co. 910 Pasquinelli Dr. Westmont, IL	Meeting 7:30 PM
9	"Quality Control for Professionals"	Industry Applications/Industrial Electronics Society	Mr. Peter's Restaurant 1018 Mt. Prospect Plaza NE Corner Rand & Central Rds.	Social Dinner Meeting 5:30 PM 6:15 PM 7:15 PM
9	"Electronic Fuses"	Power Engineering Society	Hillside Holiday Inn 4400 Frontage Rd. Hillside, IL	Social Dinner Meeting 6:00 PM 7:00 PM 7:30 PM
10	Antennas for EMC Measurements Ed Bronaugh of Electro-Metrics	Electromagnetic Compatibility Society	AT&T-Teletype 555 W. Touhy Skokie	Social Meeting 7:15 PM 7:30 PM
14	"Micro. Expos. Safety Guidelines & Their Bio. Rationale"	Antennas & Prop./Microwave Theory & Techniques Soc.	Louis Restaurant 351 E. Lake St. Addison, IL	Social Dinner Meeting 5:30 PM 6:30 PM 7:30 PM
14-15	Tech Fair	Business People, Inc.	Marriott Oak Brook 1401 W. 22nd St. Oak Brook, IL	(For information 1-800-328-4032)
23	Computer Networks	Computer Society William Lidinsky AT&T Bell Laboratories Naperville, Illinois	Wilton Manor 2200 North Main Main Street at Geneva Rd. Wheaton, Illinois	Cash Bar Dinner Speaker 5:30 PM 6:30 PM 7:30 PM
Call John North at 510-4692 for reservations.				
28-30	4th International Conference on Entity-Relationship Approach	Computer Society	Hyatt Regency O'Hare 9301 Bryn Mawr Avenue Rosemont, IL	(For information Prof. W. S. Liu, 217-333-0135)
30	"The Ford Mustang...The Road to Innovation"	Fox Valley Subsection	Wilton Manor 2200 Main St. Wheaton, IL	Cocktails Dinner Meeting 6:00 PM 7:00 PM 8:00 PM
NOV. 13	'Media for Intelligent Factories & Commercial Buildings'	Industry Appls./Industrial Electronics Soc.	Mr. Peter's Restaurant 1018 Mt. Prospect Plaza (NE corner Rand & Central)	Social Dinner Meeting 5:30 PM 6:15 PM 7:15 PM
16	Introduction To Prolog	IEEE Computer Society	William Rainey Harper College Algonquin & Roselle Rds. Palatine, Illinois 60067	8:30-4:30

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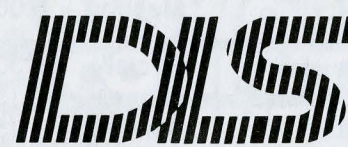


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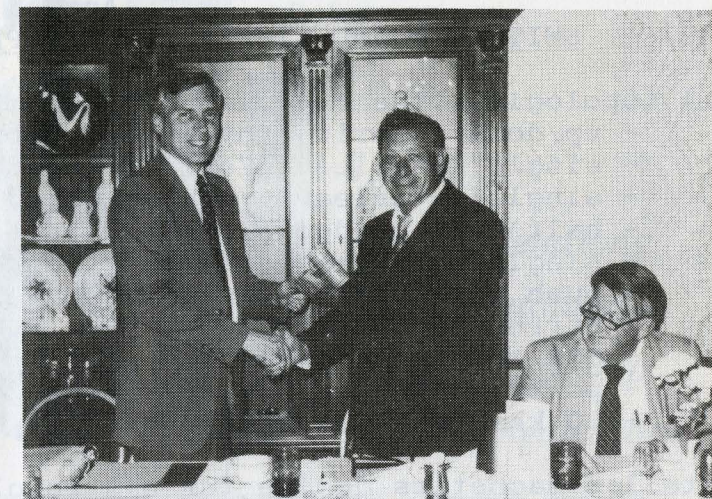
A MESSAGE FROM OUR NEW CHAIRMAN

The new IEEE year is off to a good start, and I look forward to the challenges of the coming year. One of these challenges will be to increase our membership in the Chicago Section. There are many engineers in the Chicago Section area who would perhaps join the IEEE, but do not know the benefits of belonging to this great organization, or do not know who to contact. If you know of such a person, have him or her contact Doug Smith, our membership chairman, at Square D Company, 900 Commerce Drive, Suite 30, Oak Brook IL 60521. Doug's phone number is 312-789-3750, and he will be happy to answer all inquiries.

An equally important challenge will be to reactivate existing societies and activate new societies within the Chicago Section, such as the "Vehicular Technology" society, and the "Engineering in Medicine and Biology" society. These societies have been very active in past years, but seem to have lost contact with their members recently. If you have an interest in the reactivation or formation of a local chapter of a particular society, please contact Bert Orszula, our vice-chairman, at 130 Grove Street, Lombard, IL 60148. Bert can be reached at 236-5701 or at home at 629-3184.

It is also the challenge of the executive committee and myself to pursue more active participation of the general membership in our own Chicago Section functions. If you have a few hours a month to spare, and would like to serve on a committee to further the field of Electrical and Electronic Engineering, we welcome you to contact the chairman or vice-chairman, at the addresses or phone numbers listed above. There is a need for volunteers in virtually all areas of activity, from finances to planning the annual banquet to setting up satellite technical training meetings.

With greater member participation, we can engage more societies into more technical conferences, seminars and meetings to keep you even better informed.



George Thomas, left, Outgoing Chairman, passes the meeting gavel to Hank Korman, incoming Chairman, as Vice-Chairman Bert Orszula looks on.

Also, there are many programs and meetings with speakers on various technical subjects presented by local chapters and subsections throughout the year. The schedule for the coming month is given in the calendar section of each issue of SCANFAX, as well as in special mailings by some of the local chapters. Your attendance at these meetings is most welcome, and is strongly encouraged. If you would like a particular subject within the context of your discipline discussed at one of the subsection or chapter meetings, contact Len Cohen, program chairman, at Underwriters Labs, 333 Pfingston Road, Northbrook, IL 60062. Len's office phone is 272-8800, ext 2692. He will pass the information on the proper person.

The executive committee and I welcome your comments and suggestions.

Hank Korman - Chairman Chicago Section

MODERN SWITCHING POWER SUPPLY DESIGN

A DESIGN ENGINEER ORIENTED COURSE ON THE DESIGN OF
SWITCHING POWER SUPPLIES
by

ABRAHAM I. PRESSMAN

Author of:
SWITCHING AND LINEAR POWER SUPPLY, POWER CONVERTER DESIGN

All topologies, their merits, shortcomings, fields of application:

- up/down/polarity inverting choppers
- single/interleaved/single ended forward converters
- single/interleaved/double ended forward converters
- half/full bridge width modulated converters
- single/interleaved flyback converters
- push pull width modulated converters
- current mode topology
- SCR resonant converters
- power mosfet basics, power mosfet switching supply designs
- 20 khz to 300 khz designs

Detailed magnetics design for all topologies. Derivation, application of all magnetic design equations for all topologies. Design examples:

- transformer core selection for various power levels, frequencies, flux densities, flux density limitations
- primary, secondary turns equations, coil design, temperature calculations
- DC current biased, gapped ferrite and MPP core designs
- magnetic amplifier post regulator design

Significant circuits design techniques:

- gain/phase tailoring for feedback loop stability
- bipolar base, mosfet gate drive schemes for minimum switching loss
- overview of high usage PWM control chips
- snubber designs
- reliability/failure modes in switching power supply design

REGISTRATION INFORMATION:

Where - Holiday Inn/Hillside, 4400 Frontage Road, Hillside, Illinois.
When - 8:30AM - 4:30PM; November 5 - 8, 1985.
Fees - \$795 per participant. Discount of 10% for three or more registrants from one company. Fee payable in advance by check or company purchase order on submission of registration. Make checks payable to:
Switchtronix Power Inc., 37 Lawmarissa Road, Waban, MA 02168.
To ensure availability of space and assist in facilities planning, please register by October 29, 1985.
For further information, please call (617) 332-7794.

REGISTRATION FORM FOR "MODERN SWITCHING POWER SUPPLY DESIGN" COURSE:

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-ADV-

The Chicago Section mourns the passing of Dr. Hans Nissel, one of our Senior Life Members on August 7, 1985, after a long illness. As a pioneer in rate engineering for public utilities (electricity and gas) he wrote a textbook on the subject about 50 years ago (in German and French) which was subsequently translated into English. After completing his education with a PhD in Electrical Engineering in Berlin, he worked in Germany and Egypt before coming to the U.S. His articles appeared in numerous issues of "The Fortnightly", a specialized publication in the utility field. As part of his work he developed a closed-loop model of the cost elements essential to understanding the basis for rate determination. Hans also attended most of the recent Life Member events sponsored by the Section (see last year's picture in SCANFAX). We will miss his major contributions to utility rate engineering.

Joe Feitler

FOX VALLEY SUBSECTION

WEDNESDAY, OCTOBER 30, 1985
WILTON MANOR

The Ford Mustang ... the Road to Innovation

As the real "father of the Ford Mustang, Donald N. Frey, chairman and chief executive officer of Bell & Howell, will illuminate how marketplace statistics matched with existing Ford Falcon technology and new styling resulted in the most successful new product in the history of the automotive industry. Innovation is the well spring of growth. To many, innovation is the direct product of substantial investments in "pie-in-the-sky" research and development.

Donald Frey is chairman and chief executive officer of Bell & Howell Company. His extensive knowledge of the Ford Mustang comes from sixteen years of management positions with Ford ranging from Manager, Metallurgical Department in Ford Scientific Laboratory to Vice President, Product Development Group for Ford Motor Company. Dr. Frey received his Bachelor's degree in metallurgical engineering, Master's degree in engineering and Ph. D. in metallurgical engineering from the University of Michigan. He also has experience in

academia from the University of Michigan and Northwestern University. His many memberships include the National Academy of Engineering and the American Society of Mechanical Engineers.

Place: Wilton Manor
Location: 2200 Main Street
Wheaton, Illinois
(See Map)
Time: Cocktails - 6:00 p.m.
(Cash Bar)
Dinner - 7:00 p.m.
Meeting - 8:00 p.m.

Please call (312) 236-4609 for dinner reservations no later than Tuesday, October 29. If you cannot attend the dinner, please feel free to come to the meeting.

RELIABILITY SOCIETY-CHICAGO CHAPTER SEMINAR ANNOUNCEMENT

COMPUTERIZED RELIABILITY PREDICITON

Seminar/workshop November 16, 1985
Chicago, Illinois

Manually preparing a reliability prediction using MIL-HDBK-217 or other mathematical methods is time consuming and very laborious. In recent years computerized programs have been developed to alleviate this problem and make updating or revising easier. The initial programs were not flexible enough and much debugging and modifying of the programs ensued.

The IEEE Reliability and Computer Societies are sponsoring a seminar to address past and current computerized practices and present new methods or developments to meet this challenging role.

Six outstanding papers will be presented during the one day seminar covering prominent subjects related to this technology. Of particular interest will be actual case histories of user's experience with prediction programs associated with the latest state-of-the-art products.

Exhibitors will be included for demonstration of their programs and attendees will be able to participate in a day long workshop gaining hands-on experience.

For information contact: Paul Evans 312-259-9600 X6431

PLACEMENT SERVICE

The Chicago Section is now offering a Placement Service for its members free of charge. The program is intended for those who are Member Grade and above and is a positive step to help our members who are unemployed. If interested in any of the applicants listed below, call the IEEE office (236-4609) for their name and phone number. If marked "confidential," the applicant will be contacted by the IEEE office so that he/she may contact the prospective employer.

- B7 — JC electronic design - control systems and active networks.
- B9 — Plant engineer - hi voltage and electronics specialties.
- B10 — HW - analog/digital. SW -c/unix/assembly/basic.

If you are an IEEE member and unemployed, call or write for the necessary form. Direct your request to: IEEE Placement Service • 125 S. Clark Street - Room 1545 • Chicago, Illinois 60603.

NCF SPEAKERS ANNOUNCED

The 1985 National Communications Forum on October 7-9 at the Ramada O'Hare in Rosemont will feature a record 63 half-day seminars presented by 300 industry experts. In addition to the outstanding education program, the Forum will offer many opportunities for participants to socialize. Receptions for all conference participants will be held at hospitality suites for evening discussions. Communication Industry Luncheons will feature the following key speakers.

Monday - James E. Olson, President, AT&T
Tuesday - William L. Weiss, Chairman, AMERITECH
Wednesday - Edward A. Otting, Director, Information Systems Operations, Eli Lilly and Company

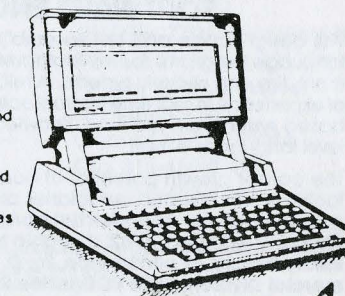
You are encouraged to call the NCF85 office for full registration details - 312/828-0008.



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FUKUDA NAMED VICE PRESIDENT AT HARZA

Yoneo Fukuda has been elected vice president of Harza Engineering Company, a Chicago-based consulting engineering firm. Mr. Fukuda is also chief electrical engineer for the firm. He is responsible for the safety, quality and economy of all electrical engineering at Harza.

Mr. Fukuda is a registered professional engineer in Alaska and Illinois. Mr. Fukuda is a graduate of Illiois Institute of Technology where he earned a Bachelor of Science in Electrical Engineering. He also earned a Juris Doctor in Law at DePaul University and is a member of the Illinois Bar.

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