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CHICAGO SECTION • IEEE • INSTITUTE OF ELECTRICAL & ELECTRONICS ENGINEERS

FEBRUARY 1975

CALENDAR OF EVENTS

IEEE OFFICE: 263-5954

- Feb. 12 "Power Transformers"; IAS/IECI; Nielsen's Village, 7330 W. North Avenue, Elmwood Park. (Page 3)
Feb. 18 Washington Award Dinner, Pick Congress Hotel, Chicago, Ill. (Page 2)
Feb. 19 "Air Quality and Future Automobile Plants"; IEEE/Fox Valley; Gaslight Manor, Aurora, Ill. (Page 1)
Feb. 25 "Mass Transportation"; Power Engineering Society; Midland Hotel, 172 W. Adams Street, Chicago. Social period, 11:30 a.m.; luncheon 12:00 noon. (Page 3)
March 5 "Coal Gasification"; Power Engineering Society/Fox Valley Subsection; Spinning Wheel Restaurant, Hinsdale, Ill. Social hour, 6:30 p.m.; dinner, 7:00 p.m.; meeting, 8:00 p.m. (Page 2)
March 6 First meeting of Microprocessor Systems Design Course; IEEE/IEEE Computer Society; Northwestern University; Northwestern University, Evanston, Ill. (Page 4)
March 12 "Electrical Safety"; IAS/IECI; Nielsen's Village, 7330 W. North Avenue, Elmwood Park, Ill. Social hour, 5:30 p.m.; dinner, 6:15 p.m.; meeting, 7:15 p.m.
March 19 "Service after Sales"; Communications Society; Lilac Lodge, 2135 South Wolf Road, Hillside, Ill. Social hour, 6:30 p.m.; dinner, 7:00 p.m.; meeting, 8:00 p.m.
April 21-23 American Power Conference, Palmer House, Chicago

Deadline for copy: First week of month preceding publication

ENGINEERS WEEK MEETING



What progress has been made in reducing air pollution by automobiles?

What has happened to automobile fuel economy in the meantime? What vehicle emission standards should be adopted to assure satisfactory air quality and conserve gasoline? What kind of power plants might be used to achieve good air quality with good fuel economy?

Dr. Wilfred E. Bettoney, director, Petroleum Laboratory, E. I. du Pont de Nemours and Co., Inc. will answer these questions and many more when he talks on "Air Quality and Future Automobile Plants" at the February 19 Engineers Week meeting celebrating Engineers Week. Cosponsored by Chicago Section, IEEE, Fox Valley Subsection, and the ASME, SAE, and the Salt Creek Chapter of ISPE, the meeting will be held at the Gaslight Manor, Aurora, Ill. Social hour, 6:30 p.m.; dinner, 7:00 p.m.; meeting, 8:00 p.m. Cost of the roast sirloin of beef

dinner is \$6.50 per person. For reservations, call the IEEE office, 263-5954.

Bettoney received his BS in mechanical engineering from the University of Maine. He started his du Pont career in 1946 at the Petroleum Laboratory, working on petroleum additives research. Following assignments as assistant director of the laboratory, assistant technical director of the Petroleum Chemicals Division, and technical manager of the Eastern Region, he was appointed to his present position.

Dr. Bettoney has served as chairman of the Philadelphia Section of the Society of Automotive Engineers, as chairman of the Fuels and Lubricants Technical Committee, and on the SAE's Engineering Activity Board. He is presently a member of the SAE Board of Directors, as well as a member of the ASTM and the API.

PACKARD TO RECEIVE WASHINGTON AWARD

David Packard, co-founder and chairman of the board of Hewlett-Packard Company, will receive The Washington Award at a banquet Tuesday, February 18, at the Pick-Congress Hotel, Chicago. The Washington Award is given annually to an engineer "for accomplishments which pre-eminently promote the happiness, comfort and well-being of humanity." It is awarded in honor of George Washington, during National Engineers Week. Six societies sponsor the award: American Society of Civil Engineers; American Institute of Mining, Metallurgical and Petroleum Engineers; American Society of Mechanical Engineers; Institute of Electrical and Electronics Engineers; National Society of Professional Engineers; and Western Society of Engineers. James Ralston, Chicago Section IEEE chairman, will officially represent the Section at the Award Banquet.



Packard, the 52nd recipient of the Washington Award, is being honored for his outstanding contribution in the field of electronics and measurements, and for his government service, which includes serving as U.S. Deputy Secretary of Defense. He has also served as trustee and president of the Stanford University Board, is a Fellow of IEEE, and a member of the National Academy of Engineering.

David Packard attended Stanford University, where he received a BA in 1934 and an EE in 1939. From 1936-38, he was an engineer in General Electric Company's vacuum tube engineering department. In 1938, he returned to Palo Alto and the following year founded Hewlett-Packard Company with William R. Hewlett, a Stanford classmate.

Packard served as a partner until the company was incorporated in 1947, becoming president at that time and chairman of the board and chief executive officer in 1964. He left the company in January 1969 to accept a presidential appointment as U.S. Deputy Secretary of Defense, serving in this capacity for 35 months. Upon returning to California, in January 1972, he was elected chairman of

the board of Hewlett-Packard. Tickets for the Washington Award Dinner are \$16.50 per person, including gratuities and tax. Tables for 8 may be reserved. For reservations, call Western Society of Engineers, 663-0220.

COAL GASIFICATION

The energy crisis has placed new importance on alternate sources of fuel for electric power generation. At the March 5 joint meeting of the Chicago Chapter, Power Engineering Society, and the Fox Valley Subsection, Dr. Bernard S. Lee, Institute of Gas Technology, will offer a look at one new and fascinating alternative to the classic fossil fuel processes. This coal gasification process is being developed by the Institute of Gas Technology, associated with Illinois Institute of Technology.

Lee will review the development of coal gasification for producing both pipeline-quality gas of high BTU content and utility gas of low BTU content, suitable for power plant use. He will describe briefly the basic chemistry involved, outline several processes now under development, and point out the key differences among them.

As Director, Coal Gasification Research at IGT, Dr. Lee's primary responsibility is directing the development of the IGT HYGAS process for producing pipeline gas from coal. This project includes basic laboratory research, pilot plant development work, economic evaluation, and process design and engineering for commercial plants.

Bernard S. Lee received his BS and his PhD, both in chemical engineering, from Polytechnic Institute of Brooklyn in 1956 and 1960, respectively. He is a registered professional engineer in New York, Illinois, and Massachusetts. Dr. Lee is a member of the American Institute of Chemical Engineers; American Chemical Society; American Institute of Mining, Metallurgical, and Petroleum Engineers; American Association for the Advancement of Science; and Sigma Xi.

The meeting will be held on Wednesday, March 5, 1975, at the Spinning Wheel Restaurant in Hinsdale. Attendance is open to the public and is not limited to IEEE members. Social hour, 6:30 p.m.; dinner, 7:00 p.m.; meeting 8:00 p.m. For reservations, please call the IEEE office, 263-5954.

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SCANFAX, February 1975 — Volume 27, Number 6. SCANFAX is published monthly, except July and August by the Chicago Section, Institute of Electrical and Electronics Engineers for the information of the members. Editorial office is at 1200 E. Madison Park, Chicago, Ill. 60615, and business office at 55 E. Washington Street, Chicago, Illinois 60602; telephone number (312) 263-5954. Subscription rate for IEEE members collected in dues, \$1.50; for others, \$3.00 per year. Second-class postage paid at Chicago, Illinois.

Meeting Reservations

Remember that the IEEE office, (312) 263-5954, will take your meeting reservations. The best time to call is between 9:30 a.m. and 12:30 p.m. or between 2:30 p.m. and 5:00 p.m.

The meeting coordinator for any group should call and leave his number with Ollie at the office, so she can refer questions on matters other than reservations.

Change of Address

If you have moved — or are about to move — please notify the IEEE office in NEW YORK. Our SCANFAX mailing labels come from there, and we cannot update your mailing address locally in Chicago.

A change of address form is included in each issue of SPECTRUM. Your local post office will also supply you with cards; mail to Emily Sirjane, Membership Services, IEEE, 345 E. 47th Street, New York, NY 10017. Include your SPECTRUM mailing label if possible. We cannot forward this information for you, so please do not send it to the local office.

CALL FOR PAPERS

Papers are invited for the 1975 International Electrical, Electronics Conference and Exposition scheduled for Toronto, Canada, September 29, 30 and October 1, 1975. This conference is the largest and most comprehensive of its kind in Canada, attracting interested technical personnel from all parts of Canada, the United States, and other parts of the world.

In 1975, papers will be grouped by the various market areas in which electrical and electronic products are used. Some of these are: Home entertainment, Broadcast, Navigation Aids, Emergency Services, Avionics, Utility, Medicine, Industrial, Telecommunications, Satellite Communications, Military, Business, and Transportation.

Submit original papers of about 20 minutes duration to be given during the Conference, and to be published in abstract form in the conference technical digest.

Submission should include: (1) One page with title and 50 word abstract. Include name of author(s) company affiliation and telephone number. (2) A one page summary on a separate sheet but attached to the abstract; this will be used to judge the acceptability of the paper. The summary should clearly state: a) the purpose of the work or project; b) how much it advances the art; and c) what results have been obtained.

Submit abstract and summary on or before March 1, 1975 to Richard P. Matthews, Chairman, Technical Program, International Electrical, Electronics Conference, 1450 Don Mills Road, Don Mills 404, Ontario, Canada.

MASS TRANSPORTATION

At the February 25 meeting of the Chicago Chapter of the Power Engineering Society, Philip A. Smith, General Electric Company, will discuss the topical subject of mass transportation. Smith will contrast current and historical mass transportation means and will point out current trends in national, intercity, and urban mass transportation. He will also show how transportation relates to household spending, passenger miles traveled, the national economy, and energy consumption.

Philip A. Smith earned his BS in electrical engineering in 1954 from Seattle University, where he played basketball and was student body president. After graduation, he joined the engineering test program at General Electric, later holding assignments in the

POWER TRANSFORMERS

At the February 12 meeting of the Chicago joint chapter of the IEEE Industry Application Society/Industrial Electronic & Control Instrumentation Group, Thomas L. Macchia, Westinghouse Electric Corporation, will speak on "Power Transformers — Their Applications, Standards, and Ratings." Macchia will describe different types of power transformers (500-100, 000KVA to 23 KV primary voltage), showing applications of each type. He will discuss how these transformers are tested and rated, and will show how test results should be interpreted.

Thomas L. Macchia received his BS in

ENGINEERING UNEMPLOYMENT

The IEEE has started a monthly survey of its membership to gain more accurate information regarding unemployment within the engineering profession. Approximately 2,500 members, randomly selected, will receive a questionnaire for each survey. A new group will be selected each time.

From returns already received from the first questionnaire, there are 2.18% who list themselves as involuntarily unemployed. This compares with an unemployment figure of 1.9% published in the IEEE's 1972 *Salary and Fringe Benefit Survey*. Another 4.83% of the surveyed members indicated they were either under employed or working full-time in a position other than the field of their primary technical competence. They have also indicated a desire to return. These figures were tabulated after more than 56% of the questionnaires were

electrical engineering at Ohio University and has pursued graduate work in electrical engineering at the University of Pittsburgh. He has been with the Sharon Transformer Division, Westinghouse Electric Corporation for the past 27 years, where he is presently a senior design engineer.

Meeting will be held at Nielsen's Village, 7330 W. North Avenue, Elmwood Park, Ill. Social hour, 5:30 p.m.; dinner, 6:15 p.m.; meeting, 7:15 p.m. Cost of dinner is \$7 for members; \$8 for nonmembers. For reservations, call Bob Loewe, 782-5520.

returned. Those listing themselves as involuntarily unemployed were usually forty years old or over. This was also true in the 1972 survey. Of those listing their age on the form, over 71% of those unemployed were from this age group. In the under-employed group, 47.5% of the members were forty or over.

The frequency of this manpower survey should enable the Institute to provide current, factual information on the employment trends within the industry. These figures will also enable IEEE to plan effective manpower programs where and when needed to meet the needs of its members.

Unemployment Index Survey	
Questionnaires mailed	2,500
Answers received	1,412
Void because they're retired, students, deceased, miscellaneous	128
Total available manpower	1,284
Employed full-time in area of primary technical competence	1,122
Employed full-time not available for employment in area of primary technical competence	72
Employed available for full-time employment in area of primary technical competence	62
Unemployed involuntarily	28

ELECTRONIC ENGINEER

Graduate Engineer with experience in control circuits for manufacturer, designer, consultant firm est. 30 years in H-F Systems (induction, dielectric and micro-wave). Salary dependent upon experience. Send resume to REEVE ELECTRONICS, INC., 609 W. Lake St., Chicago, IL 60606, or phone 312-726-9755.

4 MICROPROCESSOR COURSE

A comprehensive course in "Microprocessor Systems Design" will be offered jointly by Chicago Chapter, IEEE Computer Society; Chicago Section, IEEE; and Northwestern University. The course will run for five Saturdays, beginning March 6, 1975, at Northwestern University, Evanston, Ill.

The course will deal with the design of systems incorporating a microcomputer. Application examples are taken from systems actually designed and built, and will be discussed in detail. Registration will be limited so that individual interaction with the instructors will be possible. The course fee of \$175 includes lectures, texts, materials, and luncheons. Register now, by sending in the insert included with this copy of SCANFAX.

Session I	Morning	Fundamentals of Microcomputer Systems
	Afternoon	Architecture of Typical Microprocessors
Session II	Morning	Microcomputer Component Technology; Memories
	Afternoon	Microprocessor Interface Techniques
Session III	Morning	Design Fundamentals
	Afternoon	Application Example No. 1
Session IV	Morning	Alternatives to Microprocessor Based Design
	Afternoon	Application Example No. 2
Session V	Morning	Design Support Facilities
	Afternoon	Discussion of the Class Design Problem

The course sessions will be held five alternative Saturdays: March 6, March 20, April 3, April 17, and May 1.

Lecturers will include: Dr. B. W. Jordan Jr, associate professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in digital system design and organizer of microcomputer courses.

2. Dr. W. J. Lennon, assistant professor, Department of Computer Sciences, Northwestern University; specialist in realtime computer systems and Director of Computer Sciences Research Laboratory.

3. Dr. F. M. Brasch, assistant professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in computer

control and digital design.

4. Dr. M. J. Gonzalez, assistant professor, Department of Computer Sciences, Northwestern University; specialist in computer organization and distributed systems.

5. S. Barkey, vice president, Prometrics, Inc.; designer consultant for microcomputer-based systems.

6. C. Foster, EMU Electronics; designer-consultant for microcomputer-based systems.

Registration fee for the Microprocessor course should be sent to Dr. David Hinshaw 6D-319, Bell Telephone Laboratories, Naperville, IL 60540. Make checks payable to Microprocessor Course 75. Registration deadline is February 15, 1975, so be sure to send your application and check in before that.

Additional information can be obtained from Dr. Hinshaw, 690-4264; Dr. B. W. Jordan, Jr., 492-5531; or Dr. W. J. Lennon, 492-5248.

KORPEL NAMED FELLOW

Adrianus Korpel was elected a Fellow of IEEE, as of January 1, 1975. He was cited "for contributions to the understanding and applications of acoustooptic interactions. Korpel will receive his Fellow Award at the 1975 Recognition Dinner.

AUTOMATIC CONTROL AWARD

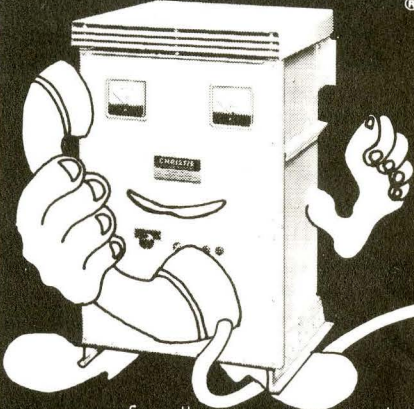
Nominations are invited for the Donald P. Eckman Award for 1975. A certificate and cash award will be granted for an outstanding contribution to the field of Automatic Control by a candidate younger than 30 years. The Award will be presented at the 1975 Sixth World Conference of the International Federation of Automatic Control.

Contributions may be technical or scientific publications, theses, patents, inventions, or combinations of these, in the field of automatic control.

Nominations must include supporting documentation in English, and must include a full endorsement by at least one responsible supervisor.

All nominations must be submitted by March 1, 1975, to: Professor Robert N. Clark, chairman, AACC Awards Committee, Dept. of Electrical Engineering FT-10, University of Washington, Seattle, Washington 98195.

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IEEE ACTS AS "FRIEND OF COURT"

For the first time, the IEEE has filed a motion to act as *amicus curiae* (friend of the court) in the case filed by H. I. Hjortsvang and two of his engineer-colleagues against the San Francisco Bay Area Rapid Transit District (BART) in the Superior Court of the State of California.

In this case, the three engineers are contesting their firing by BART, ostensibly because they complained to the transit district's board of directors about the safety and efficacy of some systems designs. The engineers claim that their complaint was ethical practice and that they were acting for the well-being of the general public. BART officials contend the engineers were fired because they took their complaint outside the organization's chain of command.

In acting as a friend of the court, the IEEE will provide guidance on professional practices that the court would not be able to evaluate in strictly legal terms. The IEEE will be able to define ethical practices for engineers, much the way organizations such as the medical and legal professional organizations define ethical practices for their members.



CHICAGO SPRING CONFERENCE

ON BROADCAST AND TELEVISION RECEIVERS

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Awards Committee

JAMES HORNBERGER

Delco Electronics, Division of GMC
1800 E. Lincoln Road
Kokomo, Indiana 46901

CHICAGO SPRING CONFERENCE

SECOND CALL FOR PAPERS

The 1975 Chicago Spring Conference will be held at the Marriott Motor Hotel in Chicago on June 9 and 10, 1975. Special consideration will be given to papers that present innovative concepts and techniques related to consumer product designs.

A special session will be held on New Techniques in Video Display, organized jointly with the Society for Information Display.

A certificate, plaque and \$300 prize money will be awarded for the best paper and \$150 prize money will be awarded for second place.

The deadline for receipt of abstracts is March 3, 1975. Potential authors are requested to submit a 200 to 400 word abstract. The paper title, author(s), company affiliation, and position should also be included.

Papers should be limited to 2500 words and the presentation to twenty minutes. Final copies of papers are due at the time of the Conference in order to be considered for awards. Reproduction service at a nominal fee will be available for attendees desiring pre-publication copies of the papers.

Notification of acceptance, request for biographical information, and the format required for publication in the IEEE Transactions on Consumer Electronics will be sent by April 4, 1975.

Please submit proposed papers to:

Mr. Ted Rzeszewski
Papers Committee
Quasar Electronics Corporation
9401 W. Grand Avenue
Franklin Park, Illinois 60131
Phone: 312-451-1200 ... Ext. 3661

COURSE ANNOUNCEMENT

MICROPROCESSOR SYSTEMS DESIGN

Offered By

Chicago Chapter of IEEE Computer Society,
Chicago Section of IEEE and Northwestern University

To Be Held At Northwestern University, Evanston, Illinois

5 Days - March 6, 20, April 3, 17, May 1

This is intended to be a comprehensive course dealing with the design of systems incorporating a microcomputer. Application examples are taken from systems actually designed and built and will be discussed in detail. To allow individual interaction registration will be limited.

Session 1	Morning Afternoon	Fundamentals of Microcomputer Systems Architecture of Typical Microprocessors
Session 2	Morning Afternoon	Microcomputer Component Technology; Memories Microprocessor Interface Techniques
Session 3	Morning Afternoon	Design Fundamentals Application Example #1
Session 4	Morning Afternoon	Alternatives to Microprocessor Based Design Application Example #2
Session 5	Morning Afternoon	Design Support Facilities Discussion of the Class Design Problem

Fee \$175 - includes course lectures, materials, texts, and luncheons

SPEAKERS

1. Dr. B. W. Jordan, Jr., Associate Professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in digital system design and organizer of microcomputer courses.
2. Dr. W. J. Lennon, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in real-time computer systems and Director of Computer Sciences Research Laboratory.
3. Dr. F. M. Brasch, Assistant Professor, Departments of Electrical Engineering and Computer Sciences, Northwestern University; specialist in computer control and digital design.

4. Dr. M. J. Gonzalez, Assistant Professor, Department of Computer Sciences, Northwestern University; specialist in computer organization and distributed systems.
5. Mr. S. Barkey, Vice President, Prometrics, Inc.; designer consultant for microcomputer-based systems.
6. Mr. C. Foster, EMU Electronics; designer/consultant for microcomputer-based systems.

For further information contact;

Dr. David Hinshaw
Chairman, Chicago Chapter of IEEE Computer Society
690-4264

Dr. B. W. Jordan, Jr.
Departments of Electrical Engineering and Computer Sciences
Northwestern University
492-5531

Dr. W. J. Lennon
Department of Computer Sciences, Northwestern University
492-5248

Registration Form

Name:

Home Phone:

Business Phone:

Affiliation:

Address:

Mail to:

Dr. David Hinshaw 6D-319
Bell Telephone Laboratories
Naperville, Illinois 60540

Make checks payable to:

Microprocessor Course 75

Registration deadline Feb. 15, 1975