

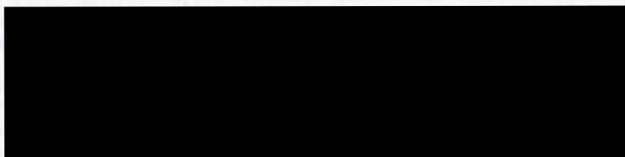


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820 NORTH ORLEANS STREET  
CHICAGO, IL 60610

Official Publication of the Chicago Section • Institute of Electrical & Electronics Engineers • NOVEMBER 1990



## TIME SENSITIVE MATERIAL

\*\*\* As of 12/01/90 our IEEE Office number will change to (708)963-3828 \*\*\*

### CALENDAR OF EVENTS

For reservations call IEEE Office at (312) 649-2800 before stated deadline (*If prior to Dec 1, 1990*)

Copy Deadline for December SCANFAX is October 26, 1990

|                     |                                                   |                                                                                     |                                                                                       |                                                                     |
|---------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Nov 10<br>Saturday  | Fox Valley<br>Subsection                          | Tour of<br>Facilities<br>(by reservation)                                           | Alexian Brothers<br>Medical Center<br>800 W. Biesterfield Rd<br>Elk Grove Village, IL | Starts: 12:30 PM<br>or at: 2:30 PM                                  |
| Nov. 13<br>Tuesday  | Chicago<br>Section                                | Executive<br>Committee                                                              | Contemporary Controls<br>2500 Wisconsin<br>Downers Grove, IL                          | Meeting: 7:15 PM                                                    |
| Nov 12<br>Monday    | Antennas and<br>Propagation/<br>Microwave Theory  | Nonlinear GaAs<br>FET Modeling,<br>A Mixture of<br>Art and Science                  | Atrium Restaurant<br>3223 Algonquin Road<br>Rolling Meadows, IL                       | Social: 5:30 PM<br>Dinner: 6:30 PM<br>Meeting: 7:30PM               |
| Nov 14<br>Wednesday | Power<br>Engineering                              | Buying and Selling<br>Power in the<br>Open Market                                   | Carson Pirie Scott<br>Monroe & Wabash<br>Chicago (Corporate Level)                    | Social: 11:30 AM<br>Lunch: 12:00 noon<br>Meeting: 12:30 PM          |
| Nov 14<br>Wednesday | Electron Devices;<br>Northwest<br>Subsection      | High Performance<br>Multi-Chip<br>Modules                                           | Wilton Manor<br>2200 N. Main St.<br>Wheaton, IL                                       | Social: 6:00 PM<br>Dinner: 7:00 PM<br>Meeting: 8:00 PM              |
| Nov 14<br>Wednesday | Communications                                    | Integrated Services<br>Digital Network<br>(ISDN) Applications                       | Sharko's Restaurant<br>2225 Ogden Ave.<br>Lisle, IL                                   | Social: 6:00 PM<br>Dinner: 7:00 PM<br>Meeting: 8:00 PM              |
| Nov 29<br>Thursday  | LEOS                                              | Quantum Well<br>Semiconductor Structures:<br>Optical Properties<br>and Applications | Jerry Sharko's<br>2225 Ogden Ave.<br>Lisle, IL                                        | Social: 5:30 PM<br>Dinner: 6:15 PM<br>Talk: 7:30 PM<br>Tour: 8:45PM |
| Dec 4<br>Tuesday    | Fox Valley<br>Subsection;<br>Consumer Electronics | A Technical Assessment<br>of Advanced Television                                    | Wilton Manor<br>Schmale Road<br>Wheaton, IL                                           | Social: 6:00 PM<br>Dinner: 7:00 PM<br>Meeting: 8:00PM               |



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## SCANFAX DEADLINES

| ISSUE  | COPY DUE | MAILED ON |
|--------|----------|-----------|
| DEC    | OCT 26   | NOV 15    |
| JAN 91 | NOV 27   | DEC 15    |
| FEB    | DEC 20   | JAN 15    |
| MAR    | JAN 29   | FEB 15    |
| APR    | FEB 26   | MAR 15    |
| MAY    | MAR 26   | APR 15    |
| JUNE   | APR 30   | MAY 15    |

THESE ARE FIRM DEADLINES  
FOR ADS AND COPY!!!

Here's your personal invitation from Henry Korman, Recognition Dinner Chairman, to all of our newer IEEE members, especially *recent grads*:

Please join our committee planning the The 1991 Chicago Section Recognition Dinner on Saturday, April 27, 1991 at the Embassy Suites Hotel (Higgins at Mannheim Road in Rosemont, IL).

We need your inputs to make this annual event *successful* and *enjoyable* for you, as well as for your spouse or for your "Significant Other". If interested, please call Hank at (708) 893-9352.

### \*\*\* RADAR EXPERTS\*\*\*

The history of early US RADAR is being compiled by Mr. Donald A. Helgeson. Mr. Helgeson seeks information from our membership on the electro history of early US RADAR. He can be contacted at

9200 Bennett, Evanston, IL 60203

(708) 676-4604

Currently, Mr. Helgeson edits RadarHist News Letter.

SCANFAX, (Publication) number (ISSN 0018-1297), November, 1990 Volume 43, Number 3, SCANFAX is published monthly, except July and August by the Chicago Section Institute of Electrical and Electronics Engineers for the information of its members. Business Office is at IEEE Message Center—Suite 300, 820 North Orleans Street, Chicago, IL 60610, telephone number (312) 649-2800. Subscription rate for IEEE members collected in dues, \$1.50; others, \$15.00 per year. Third class postage paid at Glen Ellyn, Illinois.

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

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### Change of Address

Send change of address to Roseann Schulz, Member Services, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854-4150. Include your SCANFAX mailing label if possible or phone direct to: 1-800-678-4333. We cannot forward this information for you, so please do not send it to the local office.



IEEE

## POWER ENGINEERING SOCIETY

SPEAKER: Mr. Richard A. Bulley, Power Supply Manager  
Commonwealth Edison Co.

TOPIC: Buying and Selling Power in the Open Market

ABSTRACT: We think of electricity as something which is just there when you flick the switch. It doesn't seem to lend itself to a commodities market. Nevertheless, electricity is bought and sold among utilities almost continuously. The speaker will explain how this is done including a history of development, regulatory jurisdictions, competitive considerations and pricing methods.

PLACE: Carson Pirie Scott - Chicago (Monroe & Wabash) - Corporate (lower) Level

DATE: November 14, 1990

TIME: 11:30 Social, 12:00 Lunch, 12:30 Presentation

Reservations must be made by Monday 11/12/90 by 12:00 p.m. Reservations may be made by calling the IEEE Chicago message center at 649-2800. Please leave name(s) and company name(s) for those wishing to attend.

## FOX VALLEY SUBSECTION

## FACILITY TOUR

Alexian Brothers Medical Center

Saturday,

800 West Biesterfield Road

November 10, 1990

Elk Grove Village, IL

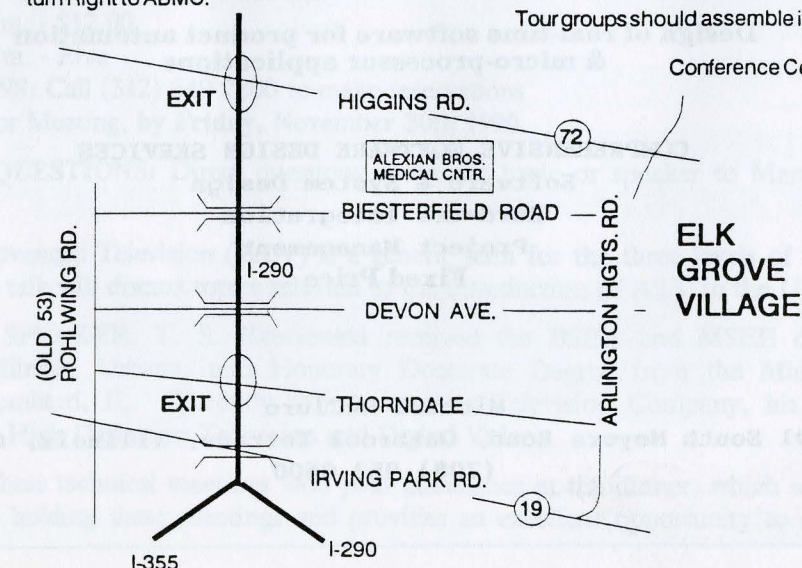
See Engineering in Medical Applications via a guided tour through Surgery, Intensive Care,

Radiology and Laboratory locations. **Tours, with a maximum of 20 people, will start**

Take I-355/I-290 North, exit Thorndale promptly at 12:30 PM with a second tour at Ave. Go east to Arlington Hgts Rd. 2:30 PM. Please make your reservations by Turn left, go North to Biesterfield and Turn Left to ABMC. Friday, November 9th through the IEEE office. Take I-290 South, exit Higgins Rd (72), go east to Arlington Hgts Rd. Turn right, go South to Biesterfield Rd and turn Right to ABMC. **The number is (312) 649-2800.**

Tour groups should assemble in the

Conference Center.





1990 IEEE CHICAGO SECTION SALARY SURVEY

| AGE       | SALARY<br>1990 | SALARY<br>1989 | SALARY<br>1988 | EXPER-<br>IENCE | YEARS W/<br>COMPANY | OVERTIME<br>HRS/YEAR | VACATION<br>PER/YEAR | SURVEY<br>RESPONSES |
|-----------|----------------|----------------|----------------|-----------------|---------------------|----------------------|----------------------|---------------------|
| 20-24     | 37127          | 33375          | 28000          | 1.3             | 1.0                 | 95.8                 | 11.5                 | 6                   |
| 25-29     | 42882          | 37375          | 35689          | 4.1             | 3.0                 | 236.4                | 12.9                 | 28                  |
| 30-34     | 52207          | 46967          | 44238          | 8.5             | 5.9                 | 234.4                | 12.6                 | 25                  |
| 35-39     | 57855          | 53578          | 48329          | 13.5            | 7.7                 | 230.3                | 14.4                 | 28                  |
| 40-44     | 64686          | 60362          | 59593          | 17.6            | 9.9                 | 340.7                | 23.6                 | 15                  |
| 45-49     | 65193          | 56692          | 59305          | 24.0            | 14.4                | 41.8                 | 19.0                 | 11                  |
| 50-54     | 69868          | 69732          | 65562          | 28.5            | 19.9                | 148.0                | 20.0                 | 15                  |
| 55-59     | 66024          | 65928          | 63478          | 31.2            | 18.6                | 188.2                | 21.3                 | 11                  |
| 60-64     | 67390          | 63593          | 60487          | 36.7            | 19.2                | 125.0                | 18.3                 | 6                   |
| 65-69     | 68500          | 67000          | 65000          | 45.5            | 25.0                | 43.8                 | 20.0                 | 4                   |
| ALL       | 56971          | 53434          | 51960          | 16.2            | 9.9                 | 203.3                | 16.3                 | 149                 |
| DEGREE    |                |                |                |                 |                     |                      |                      |                     |
| <Bachelor | 69023          |                |                | 17.2            | 12.2                | 375.0                | 17.5                 | 4                   |
| Bachelor  | 49573          |                |                | 13.1            | 8.0                 | 166.1                | 14.6                 | 52                  |
| Master    | 59659          |                |                | 16.5            | 10.2                | 225.8                | 17.2                 | 70                  |
| Doctor    | 65800          |                |                | 20.1            | 12.5                | 290.0                | 17.5                 | 8                   |
| PE        | 62938          |                |                | 24.1            | 13.4                | 139.0                | 18.0                 | 14                  |

Prepared by Steven R. Hofmann 9/90

Meeting of the IEEE Communications Society (Chicago Chapter)

DATE: Wednesday, November 14, 1990  
GUEST SPEAKER: Dr. R. J. Wilson AT&T - Bell Labs, Naperville, Il.  
PLACE: Sharko's Restaurant, 2225 Ogden Ave., Lisle  
TIME/COST: Social: 6:00 PM - Cash Bar  
Dinner: 7:00 PM - \$13.00

Speaker: 8:00 PM - FREE

RESERVATIONS: Call (312) 649-2800 to make reservation for Dinner and/or Meeting by Monday, November 12, 1990.

FURTHER INQUIRIES: For further questions call Dr. Vijay Garg at (708) 713-7220.

ABOUT THE TOPIC: AT&T Bell Laboratories in Naperville, Illinois has installed 10,000 lines of Integrated Services Digital Network (ISDN) Centrex service provided by Illinois Bell Telephone (IBT). This is one of the largest ISDN implementation to date and due to the high technology environment at Bell Labs, many new applications and ISDN implementation tools have been developed or are in the process of being developed at this site. The ISDN service provides enhanced telephony features, ISDN key system capabilities, integrated call coverage systems, and integrated voice and data on the same connection. The service is provided by an AT&T 5ESS<sup>®</sup> Switch with the 5E6 generic along with several adjunct systems providing enhanced services network management capabilities. This talk provides an overview of the pre- and post-ISDN environments, including some of the special applications, and the ISDN implementation process and tools used.

ABOUT OUR SPEAKER: Randall J. Wilson received his B.A. degree from Midland Lutheran College in 1974, his M.S and Ph.D. degrees from the University of Illinois in 1975 and 1979 respectively, and his M.B.A. from the University of Chicago in 1984. Randy joined AT&T Bell Laboratories in 1984 and was part of the 5ESS<sup>®</sup> Switching Systems Engineering team responsible for ISDN features and applications. From 1988 until the conclusion of the Indian Hill ISDN implementation, Randy was Telecommunications Manager for the Indian Hill AT&T-BL location. He is currently supervisor of a group responsible for Wireless Applications and Traffic and Network Management Systems for the International Market.

ADVANCED NOTICE - MARK YOUR CALENDARS

FOX VALLEY SUBSECTION & CONSUMER ELECTRONICS SOCIETY

TOPIC: A Technical Assessment of Advanced Television

DATE: Tuesday, December 4th, 1990

SPEAKER: T. S. Rzeszewski

PLACE: Wilton Manor, Schmale Rd., Wheaton

TIME/COST: Social: 6:00 p.m. - Cash Bar

Dinner: 7:00 p.m. - \$12.00

Speaker: 8:00 p.m. - Free

RESERVATIONS: Call (312) 649-2800 to make reservations for Dinner and/or Meeting, by Friday, November 30th 1990.

TECHNICAL QUESTIONS: Direct questions about our topic or speaker to Marty Lake at (708) 510-6626.

ABSTRACT:Advanced Television (ATV) is a generic term for the three levels of improved quality television. This talk will discuss topics relevant to the introduction of ATV in the U.S.

ABOUT OUR SPEAKER: T. S. Rzeszewski received the BSEE and MSEE degrees from the University of Illinois, Urbana, and Honorary Doctorate Degree from the Midwest College of Engineering, Lombard, IL. Currently with Matsushita Television Company, his present research interests include High Definition Television and Digital Video.

Please support these technical meetings with your attendance at the dinner, which serves to subsidize the expenses of holding these meetings and provides an excellent opportunity to meet your fellow members.



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| Back Panel Wire                                                     | Microwave Cables (Flexible & Semi Rigid)       |
| Coaxial Cable & Triaxial Cable                                      | Microwave Cable Assemblies (2 to 40 GHz)       |
| Communication Cables                                                | Molded Cable Assemblies                        |
| Computer Cables (Shielded & Unshielded)                             | Multi Conductor Cables (Shielded & Unshielded) |
| Connectors (Microwave, Fiber Optic & IDC)                           | MIL-Spec Insulated Wire                        |
| Control Cables                                                      | Phase Matched Cable Assemblies                 |
| Data Processing Cable (High Speed)                                  | Point of Sale Cable                            |
| Delay Lines                                                         | Power Limited Circuit Cable Class 2 or 3       |
| Fiber Optic Cable & Assemblies:                                     | Power Limited Fire Alarm Cable                 |
| Fiber Optic Adaptors                                                | Power Limited Fire Protective Signaling Cable  |
| Fiber Optic Attenuators                                             | Process Control Cables                         |
| Fiber Optic Coil Cords                                              | Pulse Cables                                   |
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| Intercom Cables                                                     | Special Impedance Cable (10 to 150 OHMS)       |
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## \*\*\*\*Notification of Change for Chicago Section Business Office\*\*\*\*

The Chicago Section of the IEEE will be changing its Business Office effective December 1, 1990 as follows:

Chicago Section IEEE  
2460 Wisconsin Ave.  
Downers Grove, Illinois 60515

Telephone Number (708)963-3828

As of December 1,1990, the Business Office will perform the duties that are handled by the current Business Office, e.g., reservations.

JIM CARROLL, EDITOR

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

### NOVEMBER 1990 MEETING NOTICE

### NONLINEAR GaAs FET MODELING, A MIXTURE OF ART AND SCIENCE

PRESENTED BY  
DR. WALTER R. CURTICE, FELLOW OF THE IEEE

It is a significant challenge for microwave scientists to develop large-signal models for the GaAs MESFETs since the models must be simple enough to execute rapidly in circuit simulation software but sufficiently sophisticated to accurately describe the complex behavior of these devices. The purpose of this presentation is to review the nonlinear FET modeling work directed toward development of computer aided design techniques. Emphasis will be given to microwave applications although FET models for digital circuits will also be described.

|        |                                                                           |                                                                                    |
|--------|---------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| DATE:  | Monday, November 12, 1990                                                 |                                                                                    |
| PLACE: | The Atrium Restaurant<br>3223 Algonquin Road<br>Rolling Meadows, Illinois | {1st exit north of I90 off Rt. 53;<br>{1/4 mile east on Rt. 62,<br>{Algonquin Road |
| TIME:  | * Social - 5:30 PM * Dinner - 6:30 PM * Meeting - 7:30 PM                 |                                                                                    |

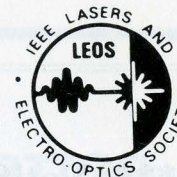
Please make your reservation by noon on Friday, November 9, by calling (312) 649-2800. The dinner cost is \$21.00 and is optional. A reservation is required, even if you plan to attend the meeting only. Non-IEEE members are welcome.





IEEE

## LASERS AND ELECTRO-OPTICS SOCIETY



### CHICAGO CHAPTER

**TOPIC:** Quantum Well Semiconductor Structures:  
Optical Properties and Applications  
**DATE:** Thursday, November 29, 1990  
**SPEAKER:** Dr. Anthony L. Moretti, Amoco Research Laboratory  
**LOCATION:** Jerry Sharko's, 2225 Ogden Ave., Lisle, Illinois

The basic properties, methods of growth, and unusual optical properties of quantum well structures will be reviewed. Specific examples of the use of quantum wells in optical waveguide devices will be presented. Devices covered will include absorption modulators and interferometer-based intensity modulators.

**AGENDA:** 5:30 p.m. Social/Business Meeting (Cash Bar)  
6:15 p.m. Dinner (\$15 per person, \$7 for students)  
7:30 p.m. Technical Presentation (No charge)  
8:45 p.m. Tour of Dr. Moretti's lab at Amoco Research Center

**REGISTRATION:** Entree choices are Coq au Vin, Orange Roughy, or Vegetable Platter. Advanced dinner reservations should be made by calling the IEEE Chicago Message Center at (312) 649-2800 by 5:00 p.m. on Tuesday, November 27, 1990. For additional information, contact Jan P. Hessler at (708) 972-3717.



IEEE ELECTRON DEVICES SOCIETY

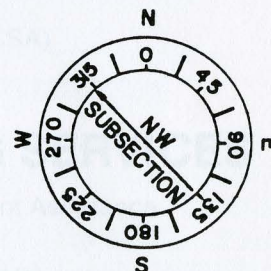
Northwest  
Subsection

### JOINT MEETING OF THE ELECTRON DEVICES SOCIETY AND THE NORTHWEST SUBSECTION

November 14, 1990

"High Performance Multi-Chip Modules"

by J. L. Brandner  
AT&T Bell Laboratories



The need for high speed and higher density electronic functions has led to a requirement for high performance electronic packaging. One class of high performance package that has been developed to meet this need is the Multi-Chip Module (MCM). This presentation will include a description of the MCM structure, application examples, and the electrical material parameters required for high speed digital systems.

J. L. Brandner received his BSEE degree from the University of Illinois at Champaign-Urbana and MS degree in Material Science from Lehigh University. He is presently with AT&T where he is primarily engaged in the thin film Hybrid Integrated Circuit design program.

**Place:** The Wilton Manor  
2200 N. Main Street  
Wheaton, Illinois

**Time:** 6:00 p.m., Social, Cash Bar  
7:00 p.m. Dinner  
\$11.50 with reservations by Nov. 9  
\$12.50 without reservations  
8:00 p.m. meeting - All welcome,  
no charge

**Reservations:** Call IEEE office at (312)649-2800