



Madison Section NEWSLETTER

Volume 3, Number 9

Serving IEEE Members of South Central Wisconsin

December 2000

X-Ray Capillary Optics

- Date/Time:** Thursday, December 21, 2000, 11:45 AM - 1:00 PM
Speaker: Walter W. Pepler, PhD, Department of Medical Physics, UW-Madison
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), Ph 829-1444
Menu: Pizza buffet, salad and soft drinks (cost \$8.00).
RSVP: by Dec. 18th to Roy Thompson via email (roy.thompson@tdstelecom.com) or call 608/664-4415

Non-member guests are always welcome!

Note: The technical presentation will be preceded by the annual officer nominations and election.

Breast Cancer is the most common cancer for women of all ages and is the leading cause of death for women between the ages of 40 and 49. Conventional film/screen mammography remains the most effective of screening for breast cancer, but still misses a significant number of cases. Digital mammography offers the potential to improve diagnostic accuracy. Currently digital mammography is limited by x-ray scatter and a relatively large pixel size (50 - 100 microns). X-ray capillary optics have recently been developed and have the potential to address these problems. X-ray capillary optics are capable of channeling x-rays in a manner similar to conventional fiber optics with light. Appropriately designed x-ray capillary optics can magnify the x-ray image (without focal spot blurring) effectively reducing the pixel size while simultaneously virtually eliminating scattered radiation. The talk will present the progress that has been made in the development of practical capillary optics for mammography.

Coming in January... UW-Madison Engineering Dean Peercy (topic TBA)

- Date/Time:** Thursday, January 11, 2001, 11:45 AM - 1:00 PM
Speaker: Dean Paul S. Peercy, College of Engineering, UW-Madison
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), Ph 829-1444
Menu: Pizza buffet, salad and soft drinks (cost \$8.00).
RSVP: by Jan. 8th to Roy Thompson via email (roy.thompson@tdstelecom.com) or call 608/664-4415

Non-member guests are always welcome!

Topic TBA.

Paul S. Peercy is Dean of the College of Engineering and Professor of Materials Science and Engineering at the University of Wisconsin-Madison. Prior to accepting this position in September, 1999, he was President of SEMI/SEMATECH, a non-profit technical consortium of more than 160 U.S. owned and operated companies that comprise the equipment and supplier infrastructure for the U.S. semiconductor industry. He assumed full-time responsibility in this position in October 1995.

CONTENTS

| | |
|-----------------------------------|---|
| Meeting Notices | 1 |
| Madison Section Officer Elections | 2 |
| New IEEE Conference Search Site | 2 |
| Publications To Launch in 2001 | 3 |
| Historical FAQs | 3 |



IEEE
Networking the World™

IEEE MADISON SECTION NEWSLETTER

Printing and Mailing by: SprintPrint
2790 S. Fish Hatchery Rd.
Madison, WI 53711

Published 9 times per year (Jan. - May & Sep. - Dec.) by the Madison, Wisconsin Section of the Institute of Electrical and Electronic Engineers (IEEE), as a service to its members in south-central Wisconsin.

Mailed at Madison, Wisconsin as 3rd Class, Non-Profit postage. Permit No. 953.

Online at: <http://www.bugsoft.com/ieee/>

For address changes: notify IEEE headquarters, address-change@ieee.org and contact Craig Heilman, cheilman@ieee.org, 608.274.2003

For advertising information: contact John Hicks, jhicks@facstaff.wisc.edu, 608.233.4875

For editorial comment: contact Craig Heilman, cheilman@ieee.org, 608.274.2003

IEEE MADISON SECTION OFFICERS

| | |
|------------------|--|
| Chair: | Craig Heilman, 274.2003 cheilman@ieee.org |
| Vice Chair: | Tom Yager, tyager@quantrad.com |
| Treasurer: | John Hicks, 233.4875 jhicks@facstaff.wisc.edu |
| Secretary: | Roy Thompson, 664.4415 roy.thompson@tdstelecom.com |
| E-mail Coord.: | John Cortsvet, 831.2945 John@me-d.com |
| Member at Large: | Les Schroeder, 258.7160 X 241 l.schroeder@ieee.org |
| Member at Large: | Sandy Rotter, 278.0377 rotter@ieee.org |
| Ex-Officio: | Dan Danbeck, 262.3748, danbeck@engr.wisc.edu |
| Ex-Officio: | Kewal Saluja, 262.6490 saluja@engr.wisc.edu |

Madison Section Officer Elections

At the December 21, 2000 monthly meeting, the IEEE Madison Section will conduct its annual officer nominations and elections prior to the technical presentation. Nominations may be made at the meeting or beforehand by telephone or via e-mail to the Chair (274-2003, cheilman@ieee.org). We promise that any ties will be decided by flipping a coin and no lawyers will be involved!



Additional candidate nominations are welcome and encouraged for all positions. The nominations to date include:

| | |
|----------------|---------------|
| Chair: | Craig Heilman |
| Vice-Chair: | Tom Yager |
| Secretary: | Roy Thompson |
| Treasurer: | John Hicks |
| Mem. at Large: | John Cortsvet |
| Mem. at Large: | Les Schroeder |
| Mem. at Large: | Sandy Rotter |
| Mem. at Large: | Dan Danbeck |

New IEEE Conference Search Site

The new, on-line IEEE Conference Database Search will allow you to retrieve information on any of hundreds of IEEE meetings in the Conference Database (formerly TAG or Technical Activities Guide). The search is located at <http://www.ieee.org/conferencesearch/>. Included are all current and future meetings that are listed in the IEEE Conference Database as well as meetings held within the past 12 months.

You can search by month, year, location, keyword in title and more. Individual conference information includes details of the meeting, as well as contact information and a link to the conference URL (if available).

A search help function is included with the IEEE Conference Database Search. For additional information contact Rosemary Tennis, IEEE Technical Activities telephone +1 732 562 6524; MailTo:r.tennis@ieee.org.

To ensure that your meetings are included in the IEEE Conference Database Search, the Conference Information Schedule form must be submitted to IEEE Conference Services. The forms are available on-line at <http://www.ieee.org/organizations/tab/conf-link.html>. For additional information on IEEE Conference Services, and for information on conferences held more than 12 months ago, contact Mary Ann DeWald, IEEE Technical Activities, telephone +1 732 562 3873; MailTo:m.dewald@ieee.org.

Three IEEE Publications Set To Launch In 2001

Three IEEE publications set to launch in 2001 include "IEEE Transactions on Device and Materials Reliability," "IEEE Circuits and Systems Magazine" and the "IEEE Sensors Journal."

"IEEE Transactions on Device and Materials Reliability" is an online publication that will provide leading-edge information critical to the creation of reliable electronic devices and materials. It will be available free to all members through IEEE Xplore(TM).

"IEEE Circuits and Systems Magazine" will cover theory, analysis, computer-aided design and practical implementation of circuits.

The "IEEE Sensors Journal," a collaborative effort of the IEEE and the Scholarly Publishing and Academic Resources Coalition will focus on the electronics and physics aspects of sensors and integrated sensor-actuators.

For information on the process for developing a new publication, go to <http://www.ieee.org/organizations/tab/perpro1.html> or contact Laura Pohl, IEEE Technical Activities, telephone +1 732 981-3446; MailTo:l.pohl@ieee.org.

Historical FAQs

For more fun historical FAQs see: http://www.ieee.org/organizations/history_center/historical_faqs.html.

Where did the name "transistor" come from?

The name comes from TRANSfer resISTOR (See article by Shockley: "The TRANSISTOR -- A Crystal Diode", Electronics, Sept. 1948, pp 68-71)

Why is current designated "I"?

The usage goes back to 1827 formulation of Ohm's law. Ohm found that the "intensity" of a current through a load is directly proportional to the emf of source driving the current. (For a more detailed explanation of this and other units, see http://www.ieee.org/organizations/history_center/board/messages/28.html)

When did commercial modem speeds advance?

We believe the dates are:

- 300 baud -- 1960
- 56 kbps -- 1987 (Spring of?)
- 4 Mbps cable modem -- Sep., 1996
- 8 Mbps ADSL -- Jun., 1997
- 10 Mbps cable modem -- Feb., 1997

When did the first transatlantic cable commence operations?

The first test signals were sent on 5 August, 1858, between Trinity Bay, Newfoundland and Valentia, Ireland. It took some time to adjust the instruments however, and it wasn't until 16 August that

Winter/Spring 2001 Telecommunications Short Courses

- **Fundamentals of Wireless Data Communications,**
January 22–24, 2001 in Madison, WI
- **Preparing for 3G Wireless Technology:
New Wideband CDWA/TDMA Standards and Systems,**
February 19–21, 2001 in Madison, WI
- **Using and Installing Fiber Optic Systems for
Communications,** *February 26–28, 2001 in Madison, WI*
- **Fundamentals of Data Communications,**
March 5–7, 2001 in Madison, WI
- **Siting Wireless Communications Antennas and Towers**
March 12–14, 2001 in Las Vegas, NV

For further information...

Web: epdweb.engr.wisc.edu or E-mail: danbeck@engr.wisc.edu

Queen Victoria and President Buchanan exchanged messages. First commercial message - from Cunard agents in New York to report the collision of the steamships "Arabia" and "Europa" - was transmitted on 20 August. The cable's insulation degraded quickly, and its messages became unintelligible on the first of September, one month after it was laid. On 27 July, 1866 the first permanent transatlantic link was completed.

Electronic Engineer

Join a multidisciplinary group of basic and applied researchers who study novel means to communicate information via the sense of touch. We seek an individual with a BSEE or equivalent with demonstrated experience in:

- Electronic device development from specification through physical prototype
- Analog and digital hardware design
- Microcontroller design and microcode
- Printed circuit design (rigid and flex)
- Windows application programming

The ideal candidate will be able to easily shift between several projects having changing goals and priorities in a flexible, casual workplace. Position available 1/1/01–6/30/01 (possible extension contingent on funding) for 25–100% appointment, salary \$32,000–62,036 depending on qualifications and experience. Please email resume (inline or attached) to Kurt Kaczmarek, kakaczma@facstaff.wisc.edu. For more information please see <http://kaz2.med.wisc.edu/>. The University of Wisconsin is an equal opportunity/affirmative action employer. UW position vacancy 38638.



Reach over 700 IEEE members in South-Central Wisconsin with information on *your products and services* every month with an ad in this newsletter.

Our members have professional interests in computers, power engineering, signal processing, communications, industry applications and a number of other technical fields.

For more information, contact John Hicks at (608) 233-4875 or jhicks@facstaff.wisc.edu.

| Per issue ad rates: | <u>1 Time</u> | <u>2 Times</u> | <u>5 Times</u> | <u>9 Times</u> |
|---------------------|---------------|----------------|----------------|----------------|
| Business Card | \$ 50 | \$ 45 | \$ 42 | \$ 41 |
| 2-Business Card | 83 | 76 | 71 | 70 |
| 1/4 Page | 145 | 135 | 129 | 127 |
| 1/2 Page | 215 | 203 | 195 | 193 |
| Full Page | 330 | 315 | 306 | 303 |

NON-PROFIT
Bulk Rate
U.S. POSTAGE
PAID
Madison, WI
Permit No. 953

IEEE 
Networking the World™
2790 S. Fish Hatchery
Madison, WI 53711