

April 1997
Vol. 4, No. 2 ISSN:1074 1879
Editor-in-Chief: Krishna Shenai

Table of Contents

Upcoming Technical Meetings	1
• 1997 CCD & AIS • 1997 DRC	
• 1997 TRANSDUCERS • 1997 UGIM	
1996 EDS Meetings	
'Best Practices' Workshop	2
Society News	6
• 1996 EDS Distinguished Service Award	
• 1996 J.J. Ebers Award	
• 1997 EDS J.J. Ebers Award	
Call For Nominations	
• EDS to Introduce Mini-Colloquia Concept	
for its Chapters	
• EDS Participates in IEEE TAB Colloquia	
• EDS Members Elected to the IEEE	
Grade of Fellow	
• EDS Regions 1-6, 7 & 9 Chapters Meeting	
• Summary of the December 1996 AdCom	
Meeting	
Regional & Chapter News	12
EDS Meetings Calendar	17

Contributions Welcome

Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

Newsletter Deadlines

<u>Issue</u>	<u>Due Date</u>
January	October 1st
April	January 1st
July	April 1st
October	July 1st

IEEE Electron Devices Society Newsletter

1997 Workshop on Charge-Coupled Devices and Advanced Image Sensors (CCD & AIS)



The 1997 IEEE Workshop on Charge-Coupled Devices and Advanced Image Sensors will be held at the Holiday Inn Crowne Plaza, in the heart of medieval Bruges, Belgium, June 5-7, 1997. The purpose of this Workshop is to provide an opportunity to exchange new results in the area of Solid-State Image Sensors in an informal atmosphere. The Technical Program will consist of invited and contributed papers and poster sessions. As in the previous workshops, emphasis will be on high quality technical content. Ample time will be left for paper discussion. Papers on the following topics will be presented:

- Silicon CCD Device Physics, Operation and Fabrication
- CCD Imagers
- Advanced Image Sensors
- Non-Imaging Applications
- Economic Aspects of Imager Production

The conference will be held in Bruges, a small town about 100km (60mi) west of Brussels, which can be easily reached by train in less than 2 hours from Brussels International Airport. The conference hotel is in the center of town, about 2km (1.5mi) from the railway station. Hotel reservations should be made directly with the Holiday Inn Crowne Plaza Hotel, Bruges, Belgium,

(continued on page 3)

Your Comments Solicited

Your comments are most welcome. Please write directly to the Editor-in-Chief of the Newsletter at the address given on the back cover page.

Electron Devices Society

President

Louis C. Parrillo
Motorola
Tel: (512) 928-6802
E-Mail: l.parrillo@ieee.org

Vice President

Bruce F. Griffing
General Electric Company
Tel: (518) 387-6207
E-Mail: b.griffing@ieee.org

Treasurer

Lucian A. Kasprzak
Sterling Diagnostic Imaging, Inc.
Tel: (302) 451-0230
E-Mail: l.kasprzak@ieee.org

Secretary

James L. Merz
Univ. of Notre Dame
Tel: (219) 631-9177
E-Mail: j.merz@ieee.org

Sr. Past President

Michael S. Adler
General Electric Company
Tel: (518) 387-5882
E-Mail: m.adler@ieee.org

Jr. Past President

W. Dexter Johnston, Jr.
Lucent Technologies Inc.
Tel: (908) 582-7247
E-Mail: w.johnston@ieee.org

EDS Executive Director

William F. Van Der Vort
IEEE Operations Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: (908) 562-3926
Fax: (908) 235-1626
E-Mail: w.vandervort@ieee.org

Awards Chair

Tak H. Ning
IBM Research Center
Tel: (914) 945-2579
E-Mail: t.ning@ieee.org

Educational Activities Chair

Jerry M. Woodall
Purdue University
Tel: (317) 494-0732
E-Mail: j.woodall@ieee.org

Meetings Chair

Richard D. Sivan
Motorola, Inc.
Tel: (512) 933-6735
E-Mail: r.sivan@ieee.org

Membership Chair

T. Paul Chow
Rensselaer Polytechnic Institute
Tel: (518) 276-2910
E-Mail: p.chow@ieee.org

Publications Chair

Steven J. Hillenius
Lucent Technologies Inc.
Tel: (908) 582-6539
E-Mail: s.hillenius@ieee.org

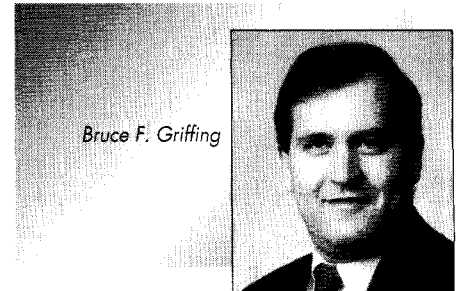
Regions/Chapters Chair

Cary Y. Yang
Santa Clara University
Tel: (408) 554-6814
E-Mail: c.yang@ieee.org

IEEE Newsletter Coordinator

Robin Edwards
IEEE Operations Center
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331
Tel: (908) 562-3945
Fax: (908) 981-1855
E-Mail: newsletter@mag.ieee.org

1996 EDS Meetings 'Best Practices' Workshop



Bruce F. Griffing

For the past 6 years, I have been the Meetings Chair for the Electron Devices Society. It is a job that has been both challenging and enjoyable. It has been fun working for a society that is as well run as EDS. During that time, a great deal has changed. As a society, we have become more global. That change is reflected in our meetings. In 1990, we participated in only one meeting held outside the US and in 1997, we will be participating in 31 such meetings. I believe this trend will continue. Furthermore, the total number of EDS meetings has increased from about 50 in 1990 to our current count of 105.

All of this has been made possible by the establishment in 1990 of an Executive Office and its subsequent expansion over the intervening years. Bill Van Der Vort, our Executive Director, and his team do a tremendous amount of work to support our meetings. Those of you who have been responsible for the organization of any EDS meetings know exactly how much work that it is. Without their help, the EDS could not support our present outreach efforts in meetings, publications, chapters and other society activities.

Another change in our meetings activities has been the establishment of an EDS Meetings 'Best Practices' Workshop. In this workshop, we try to provide an introduction to the process of running an EDS technical meeting. The need for this is ongoing, since we encourage turnover in the groups that organize meetings. As a result, new people are constantly in need of training. The workshop covers topics from hotel selection to paper selection and lots of topics in between. We also try to share new ideas in meeting organization, so that good ideas from one meeting can be utilized by others. The most recent workshop was held in conjunction with the IEDM last December. Thirty meetings were represented. Each year the workshop has improved and it has now reached the point of being extremely useful to the attendees.

As I said above, I have really enjoyed my tenure as Meetings Chair; but, as they say, all good things must come to an end. This year I turned over the mantle of Meetings Chair to Rick Sivan. I am sure that Rick will do an outstanding job. I will keep myself busy with my other job as EDS Vice President.

Bruce F. Griffing
General Electric Company
Schenectady, NY

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

1997

H.S. Bennett (1)
J.T. Clemens (2)
H. Iwai (1)
J.L. Merz (2)
K. Tada (1)
R.J. Temkin (1)
S. Verdonckt-Vandebroek (1)

1998

S. Asai (2)
A.S. Brown (1)
T.P. Chow (1)
M.A. Shibib (1)
R.D. Sivan (1)
J.M. Woodall (2)
C.Y. Yang (2)

*1999

R.G. Adde (1)
J.J. Brown (1)
B.F. Griffing (2)
R.P. Jindal (2)
J.B. Kuo (2)
J.K. Lowell (2)
I. Mojzes (2)
K. Shenai (1)

Number in parenthesis represents term.

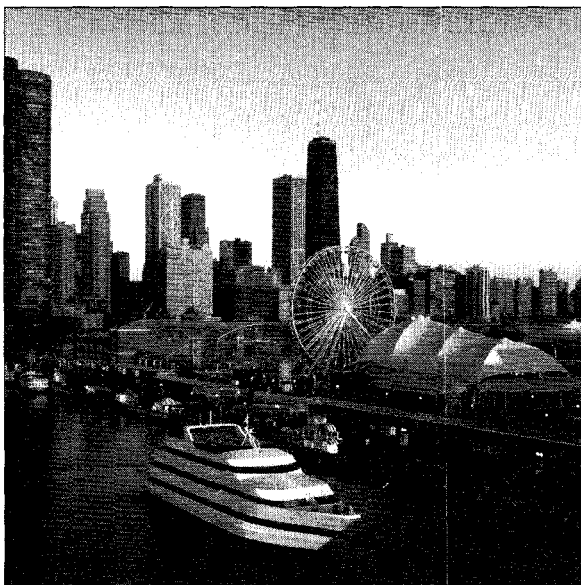
* Members elected 12/96

IEEE Electron Devices Society Newsletter is published quarterly by the Electron Devices Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 345 E. 47th St., New York, NY 10017-2394. Printed in the U.S.A. One dollar (\$1.00) per member per year is included in the Society fee for each member of the Electron Devices Society. Periodicals postage paid at New York, NY and at additional mailing offices. **Postmaster:** Send address changes to IEEE Electron Devices Society Newsletter, IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

Copyright © 1997 by IEEE: Information contained in this Newsletter may be copied without permission provided that copies are not used or distributed for direct commercial advantage, and the title of the publication and its date appear on each photocopy.

Upcoming Technical Meetings

1997 International Conference on Solid-State Sensors and Actuators (TRANSDUCERS '97)



sensor/microactuator area. Guided by an International Steering Committee composed of members from Asia, Europe, and America, the conference series began in Boston in 1981 and has met biennially since that time, with subsequent meetings in Delft, Philadelphia, Tokyo, Montreux, San Francisco, Yokohama, and Stockholm. The 1995 Stockholm meeting attracted over 1,200 participants.

The field of integrated sensors emerged about the same time as integrated circuits, but only moved to the forefront of global R&D activities during the past few years. Driven by continuing advances in low-cost microprocessors and memory, and by the explosion in connectivity represented by local and global information networks, sensors and actuators now hold the keys to applying microelectronics in a wide array of applications, ranging from transportation systems (automobiles and smart highways) through health care and environmental monitoring to automated process control. In the last of these areas, for example, distributed integrated sensors are now viewed as key to a new generation of semiconductor manufacturing tools that are able to compensate for changes in the tool environment to maintain process precision at feature sizes of $0.18\mu\text{m}$ and below. As sensor technology has grown, it has expanded from producing relatively simple components to realizing complete microinstrumentation systems on a common substrate.

The Chicago Conference, chaired by Professor Kensall D. Wise of the University of Michigan, will continue a well-established tradition of excellence in its technical program along with opportunities for attendees to mix informally and discuss topics of current interest. Over 650 contributed papers were submitted to the technical program committee, headed by Professor Stephen D. Senturia of MIT. From these, approximately 350 were selected to join 15 invited presentations highlighting the latest advances in the field. In four parallel sessions over four days, the conference will deal with a wide variety of topics. New developments in the understanding of microstructures for sensing and actuation will be described along with much-needed progress in the mixed-mode CAD tools for such devices. Advances in new materials and in

(continued on page 4)

Engineers and scientists from around the world will be gathering in Chicago this June to hear about the latest advances in integrated sensors, microelectromechanical systems (MEMS), microsystems, and related topics. The Ninth International Conference on Solid-State Sensors and Actuators (TRANSDUCERS '97), sponsored by the IEEE Electron Devices Society, will be held

June 16-19, 1997, at the Hyatt Regency Hotel, and will focus on one of the hottest areas in microelectronics — taking integrated-circuits and other technologies and using them to create complete microsystems composed of sensors, actuators, signal processing circuitry, and in some cases, wireless interfaces. This is the leading worldwide conference in the

CCD & AIS

(continued from page 1)

TEL: +32-50-345834, FAX: +32-50-345615. To qualify for the special lower conference rates, attendees should mention the IEEE CCD & AIS Workshop and make reservations before April 18, 1997. All historical sites are within easy walking distance from the hotel. More information on Bruges (e.g. historic sites, hotels, transportation, etc.) can be found on the Internet at: <http://www.brugge.be>.

The Conference will start on Thursday, June 5, 1997 at 9:00 a.m., and will end on Saturday, June 7th at 12:00 noon. For up-to-date information on this Workshop and to register, look at the conference Internet site at:

<http://www.philips.com/research/events/ccd97/workshop2.html> or send an (empty) E-mail to ccd97@natlab.research.philips.com.

For further information, please contact the Conference Chairman, Dr. Albert Theuwsen, Philips Imaging Technology, M.S. WAG-14, Prof. Holstlaan 4, 5656 AA Eindhoven, The Netherlands, TEL: +31-40-2742734, FAX: +31-40-2743390, E-mail theuwiss@natlab.research.philips.com.

Jan Bosiers
Philips Imaging Technology
Eindhoven, The Netherlands

TRANSDUCERS '97

(continued from page 3)

processes such as micromachining, very high-aspect-ratio dry etching, wafer bonding, LIGA, chip-level packaging, and 3D fabrication/microassembly will also be highlighted.

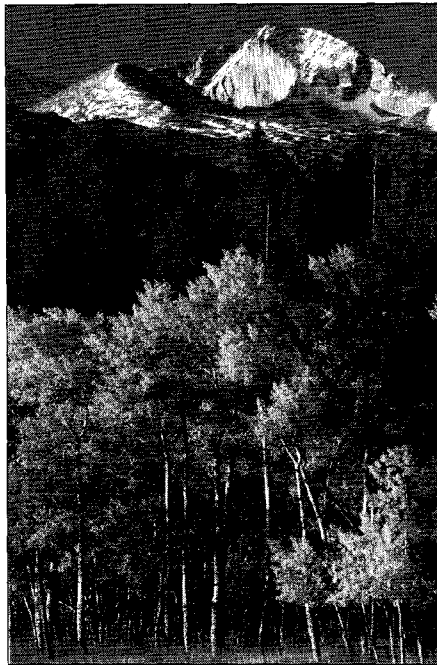
The technology has had the greatest commercial impact to-date in mechanical devices. Sessions in this area will feature sensors for force, pressure, acceleration, flow, sound (microphones), and angular movement (gyroscopes). Silicon pressure sensors have become the standard pressure-sensing devices for a broad range of applications, and accelerometers are expanding their horizons today from 50g devices for airbag deployment toward milli-g and micro-g devices for still-more-demanding applications in short-range navigation and vibration analysis. Microactuators are also gaining in importance, not only for use in self-testing integrated sensors, but also for use in high-density print heads, microvalves, micropumps, projection displays, high-density disk heads, and other devices.

Among non-mechanical physical sensors, devices for magnetic, optical, and thermal effects will be described. Integrated optical systems are the focus for increasingly intense development efforts, and uncooled micromachined microstructures are causing a paradigm shift in non-contact thermal imaging. Chemical and biological sensors are badly needed today for a wide variety of applications and will be highlighted in a number of sessions. These devices include integrated fluidic and electrophoretic systems for DNA analysis and microsystems for gas analysis based on SAW devices, adsorption-triggered film conductivity changes, and integrated microchromatography. Finally, advances in microsystem architectures, self-test techniques, autocalibration, interface standards, and digital compensation will be explored. All of these are being used today to significantly extend system performance and reliability.

Four outstanding short courses will be held on June 15, immediately preceding the Conference. These courses will provide an overview of recent advances in MEMS, describe new emerging materials and their applications (silicon carbide, diamond, and ceramics), discuss advances in chemical sensors (both liquid and gas), and explore advances in high-performance readout/interface electronics.

The Hyatt Regency Chicago is the flag-

1997 Device Research Conference (DRC)



The 55th annual Device Research Conference (DRC) will be held this year June 23-25, Monday - Wednesday, on the scenic campus of Colorado State University in Ft. Collins, Colorado, USA. The DRC is the oldest of the IEEE conferences on electronic devices. The current areas of high technical interest include scaled silicon devices, devices for wireless communications (RF and millimeter wave), optoelectronic devices of all kinds, devices for displays, wide bandgap devices, high power devices, memory structures, low power devices, novel quantum devices,

organic devices, etc. Non-semiconductor devices, such as magnetic devices, novel sensors, etc., are also of great interest. The DRC has a long history of being the conference for individuals to present new concepts and breakthroughs in devices. Past examples include the first MOSFET (1960), the Gunn effect (1961), the first CW quantum well heterostructure laser (1970), the first high electron mobility transistor (HEMT) (1980), and more recently the first green II-VI laser (1991) and the first room temperature single electron transistor (1995).

Technical Program

Because the DRC covers the full spectrum of semiconductor devices and usually has only two parallel sessions, it offers an opportunity for attendees to see the latest advances in a wide range of fields, not just one or two sub-specialties. The 1996 conference included several sessions on scaled Si and SiGe devices, III-V heterojunction electronics, optoelectronics sources, detectors, modulators, and integration, wide bandgap/power devices, display devices, and quantum devices. The emerging areas of wide bandgap, devices for displays and large-area products, quantum devices, and ultra-small Si devices were especially strong in 1996 and are expected to be so again in 1997.

Rump Sessions

A highlight of the DRC is always the very informal "rump" discussion sessions. In

ship hotel of the Hyatt chain, located just off Michigan Avenue at the foot of the Magnificent Mile. Accompanying the technical program will be a Spouses Program aimed at exploring the highlights of the city and a number of special events aimed at creating opportunities for informal interaction. These will begin with a Welcome Reception at the hotel on Sunday evening, June 15. On Monday evening, attendees can explore the great civilizations of the past at the world-famous Field Museum of Natural History. On Tuesday evening, an optional dinner cruise on beautiful Lake Michigan will be featured, and on Wednesday night the

official Conference Banquet will be held at the hotel.

Further information and registration information for the Conference can be obtained from Courtesy Associates, 655 15th Street, NW, Suite 300, Washington, DC 20005, TEL: (202) 639-4172; FAX: (202) 347-6109, or on the World Wide Web at <http://www.eecs.umich.edu/transducers/>. Attendees are urged to register for optional activities such as the Spouses Program and Dinner Cruise by no later than May 1, 1997.

Kensall D. Wise
University of Michigan
Ann Arbor, MI

these sessions, which are dedicated to controversial or emerging topics, all are asked to present their opinions (and results) and there is a lot of "back-and-forth" discussion, to say the least. In 1996, the rump session topics were, "Singing the Blues and the Greens" (nitrides vs. II-VI's vs organics for blue/green light emitters), "Macho Devices" (SiC, nitrides, SiGe, GaAs-hetero, etc., for high (microwave) power, high voltage, high temperature), and "Off-Roadmap Vehicles" (emerging Si-based technologies to leapfrog past the SIA roadmap). All were very lively and gave one a chance to see what the real issues and opportunities were — ones not often publicly presented!

Informal Atmosphere, Interaction, and Location

Both the extremely informal atmosphere of the DRC and its campus setting promote maximum levels of interaction between device researchers on all levels. It is a great opportunity to meet colleagues from other specialties, and it is not unusual for students beginning their career to eat breakfast sitting next to a plenary speaker. Furthermore, the DRC will again be held in conjunction with the Electronic Materials Conference (EMC) at the same location. The EMC will follow the DRC and will run from June 25 to June 27 (Wednesday to Friday). Thus, one can see leading edge work in electronic materials and meet colleagues in that field as well.

Colorado State University is scenically located in Ft. Collins in the foothills of the Rocky Mountains not far from the entrance to Rocky Mountain National Park. It should be noted that the 1997 DRC will not be held at the University of Colorado in Boulder, where several past DRC's have been held, since the required facilities are no longer available.

Late News

The DRC prides itself in being open to the latest results, and late news is accepted until the day before the conference. This year, the Program Chair, Dr. Emmanuel Crabbe, will accept late news at his IBM address up until June 19th. After that date, late news should be sent to Dr. Crabbe at Ft. Collins.

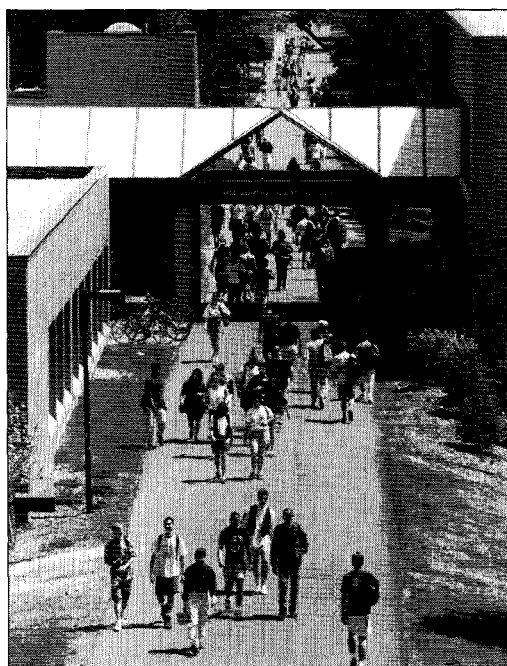
For further information on the 1997 DRC, please visit the DRC Home Page at: <http://www.ee.princeton.edu/~sturm/drc.html>. For more information on local arrangements and registration, contact

Prof. Carmen Menoni, Dept of Electrical Engineering, Colorado State University, Ft. Collins, CO, 80523 USA, TEL: 970-491-8659, FAX: 970-491-8671, E-mail: carmen@lance.colostate.edu. For information about the technical program, contact Dr. Emmanuel Crabbe, IBM SRDC, MS

E40 Bldg. 630, 1580 Rte. 512, Hopewell Junction, NY 12533 USA, TEL: 914-892-2056, FAX: 914-892-2568, E-mail: crabbe@watson.ibm.com.

James C. Sturm
Princeton University
Princeton, NJ

1997 University/Government/Industry Microelectronics Symposium (UGIM)



UGIM'97 brings together university, government and industry microelectronics and semiconductor professionals every two years. The purpose of the symposium is to discuss education and research programs in microelectronics. Recent results are presented, including new educational program initiatives and research results. Most universities involved in microelectronics worldwide have been represented at past conferences and are expected again this year. Government agencies such as NSF, NIH, NIST, Sematech, SRC, ARPA, ONR, Air Force, Army and others participate regularly. Industry interactions with universities and consortiums are also represented.

This year's conference is at Rochester Institute of Technology July 20-23, 1997. An outstanding program is planned with about 70 presentations and posters by

industry, government and university representatives. There are several new educational programs in microelectronic engineering in the planning or early offering stage. Attendees will learn the purpose of these programs and how they are organized. Other universities which have been offering courses and programs in microelectronics for years will update attendees on their progress.

A new feature of this year's symposium is the three short courses for attendees. The short courses will allow an opportunity to look in-depth at one of three topics. The topics are, "Advanced Microlithography", "CMOS IC Manufacturing in the University Laboratory", and "University Microelectronics Facilities". Each of these course offerings will include laboratory experience.

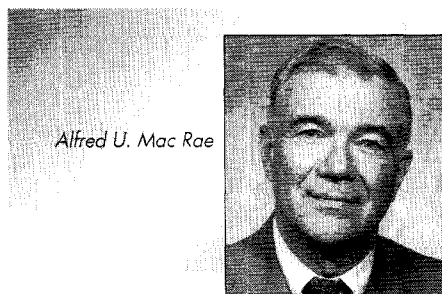
(continued on page 6)

Society News

Mac Rae Receives 1996 EDS Distinguished Service Award

Dr. Alfred U. Mac Rae was presented the 1996 EDS Distinguished Service Award at the opening ceremony of the 1996 International Electron Devices Meeting (IEDM), on December 9, 1996 in San Francisco, CA. The EDS Distinguished Service Award was established in 1993 to recognize and honor outstanding service to the Electron Devices Society and its sponsored activities. The recipient was awarded a certificate and a check for \$1,000.

Dr. Mac Rae is presently doing consulting work on satellites and telecommunications equipment. Prior to retiring as Director of the SKYNET Satellite Communications Laboratory of AT&T in 1995, Dr. Mac Rae spent more than 30 years at Bell Labs doing hands-on as well as managing research and development work.



Alfred U. Mac Rae

Dr. Mac Rae first became involved in EDS activities as a member of the IEDM program committee, rising to General Chair in 1978, where he initiated the Student Best Paper Award. He then became Chair of the EDS Meetings Committee, where he instituted policies that improved the organization, publicity and financials

of EDS-sponsored meetings. He also served as an AdCom Member-At-Large from 1984 to 1989, and as EDS President for 1986 and 1987, a period when EDS initiated three new technical journals. Currently he is serving as Chair of the EDS Ebers Award Committee, and the EDS representative to the IEEE New Technology Directions Committee. He has contributed, and continues to contribute, to many IEEE activities.

Dr. Mac Rae received the 1994 EDS J. J. Ebers Award, and is a Fellow of IEEE, a Fellow of the American Physical Society, and a member of the Bohmische Physikalische Society.

Tak H. Ning
IBM Research Center
Yorktown Heights, NY

UGIM '97

(continued from page 5)

The advanced lithography short course will include laboratory experience on Cannon i-line stepper, ASM 248 nm excimer stepper, 193 nm excimer system and an ETEC MEBES electron beam lithography system as well as automated wafer coat and develop systems. Participants will learn about advanced microlithography and how these topics can be introduced to the undergraduate and graduate students.

The CMOS IC Manufacturing course will discuss how a student-run integrated circuit factory works in the university environment. Attendees will be introduced to the factory organization and participate in the processing of wafers in the factory. The participants can choose to do g-line lithography, ion implant, LPCVD, plasma etch or oxidation/diffusion processes. A demonstration of the testing of previously completed wafers will be included as part of the short course.

The short course on University Micro-

electronics Facilities will provide an in-depth understanding of such facilities, including, equipment procurement, operating costs, maintenance of equipment, facilities concerns, safety concerns and more. A comparison of various university facilities will be discussed. This course will include a detailed laboratory tour including the facilities support areas of the laboratory.

RIT is one of the world's leaders in undergraduate microelectronics education offering a complete program leading to the B.S. degree in Microelectronic Engineering, the only ABET accredited program of its type in the nation. RIT's integrated circuit laboratory is the largest at any university in the world and has one of the most complete equipment sets for silicon integrated circuit processing. The purpose of the facility is to support RIT's undergraduate program in microelectronic engineering and also support graduate student and faculty research.

Inquiries concerning this conference can be made to Dr. Lynn Fuller, Motorola Professor and Head of Microelectronic Engineering at Rochester Institute of Tech-

nology, Microelectronic Engineering Department, 82 Lomb Memorial Drive, Rochester, NY 14623-5604, TEL: (716) 475-2035, FAX: (716) 475-2035, E-mail: lferee@ritvax.isc.rit.edu.

RIT, a nationally recognized leader in career education integrated with the liberal arts, offers a distinctive blend of more than 230 innovative programs in professional and technological fields. Founded in 1829, RIT is an independent, comprehensive university, located on a 1,300-acre suburban campus in upstate New York, enrolling 13,000 students in its eight colleges. The university has one of the world's oldest and largest cooperative education programs, providing students with opportunities for work-related experiences prior to graduation. RIT has been cited among the nation's best educational institutions by U.S. News and World Report and is listed in Barron's Best Buys in College Education.

Lynn F. Fuller
Rochester Institute of Technology
Rochester, NY

Tetsushi Sakai Winner of 1996 J. J. Ebers Award

The J. J. Ebers Award, the highest form of recognition for technical accomplishments by the IEEE Electron Devices Society, was awarded to Tetsushi Sakai at the opening ceremony of the International Electron Devices Meeting (IEDM) in San Francisco, CA on December 9, 1996. This award was established in 1971 with the intent to encourage progress in electron devices and to commemorate the life of Jewell James Ebers, distinguished pioneering contributor to transistor modeling who helped shape the understanding and technology development of electron devices. The award recognizes and honors individuals for their accomplishments of unusual merit "for outstanding technical contributions to electron devices." The recipient was awarded a certificate and a check for \$2,000.

The citation for the accomplishments of the 1996 J. J. Ebers Award recipient, Tetsushi Sakai, read as: "For pioneering research of high speed bipolar integrated circuits." He was born in Ina-shi, Nagano Prefecture, Japan in 1942 and received a BS degree in electrical engineering from Hokkaido University. In 1996, he joined what is now the Nippon Telegraph and Telephone Company (NTT) in Tokyo. At NTT, he held numerous research and managerial responsibilities for device and integrated circuit technologies. He is now with NTT Electronics Technology Corporation where he is the Deputy Executive Manager of the LSI Business Group.

In 1976, he proposed a self-aligned



Tetsushi Sakai

bipolar transistor structure called the Stepped Electrode Transistor, the SET. This structure was applied to the manufacture of micro-wave transistors, which were used in low noise high frequency amplifiers, and high power and low noise, high frequency amplifiers for communications systems. He continued his research on high frequency transistors, and in 1980, proposed another innovative bipolar integrated circuit structure called SST, which stands for Super Self-aligned Process Technology. This structure uses two layers of polysilicon, which led to the miniaturization of low power bipolar integrated circuits that operate in a speed exceeding a Gb/sec. Subsequent advances in this structure have enabled Sakai and his colleagues to fabricate integrated circuits having 16 psec/gate switching speed, with a maximum frequency of 70 GHz. These structures are widely used to manufacture high speed integrated circuits for optical and microwave transmission communications systems, computers and portable telephones, and have been licensed for use by several semiconductor companies.

Tetsushi Sakai has received numerous awards recognizing his achievements. He received the Achievement Award from the Institute of Electronics, Information and Communications Engineers (IEICE) in 1991; the Maejima Award from the Ministry of Post and Telecommunications in 1994; the Prime Minister Prize of the National Invention Awards of Japan in 1990; and the Research Achievement Award from the Director of Science and Technology Agency of Japan in 1991. He is active in the IEICE, in the organization of technical meetings, and as a Lecturer at Hokkaido University (1987-1996).

The EDS is pleased to recognize and honor Tetsushi Sakai for his outstanding technical contributions to the important field of high speed bipolar silicon integrated circuits.

Alfred U. Mac Rae
Mac Rae Technologies
Berkeley Heights, NJ

EDS to Introduce Mini-Colloquia Concept for its Chapters

The EDS Educational Activities Committee is planning to enhance its Distinguished Lecturer Program by establishing and facilitating a methodology for a mini-colloquia. The colloquia concept would generally involve organizing centrally a number of lecturers to participate in a topical symposia that could either:

- Be held in a given place to which chapters could travel to attend, or
- Have the lecturers travel as a group to a number of chapters

Once the mini-colloquia concept has been developed, EDS chapters will be notified of the guidelines.

If you have any suggestions/ideas regarding this new concept, please contact the Educational Activities Committee Chair, Jerry Woodall. His contact information is listed on Page 2.

1997 EDS J.J. EBERS AWARD CALL FOR NOMINATIONS

The IEEE Electron Devices Society invites the submission of nominations for the 1997 J.J. Ebers Award. This award is presented annually by EDS to honor an individual(s) who has made either a single or a series of contributions of recognized scientific, economic, or social significance to the broad field of electron devices. The recipient(s) is awarded a certificate and a check for \$2,000, presented at the International Electron Devices Meeting (IEDM).

Nomination forms can be requested from the EDS Executive Office. The deadline for the submission of nominations for the 1997 award is July 11, 1997. Completed nomination forms should be sent to the Executive Office at the address given on page 2.

EDS Participates in IEEE TAB Colloquia

This past October, the Electron Devices Society participated in a colloquia coordinated by the IEEE Technical Activities Board (TAB). The colloquia members visited a number of countries in Eastern Europe giving technical talks and providing information concerning IEEE and its societies. Two EDS Distinguished Lecturers, Dr. Johann-Friedrich Luy and Professor Dieter Seitzer, volunteered to represent EDS and participate in this event. Below are reports from both Dr. Luy and Professor Seitzer summarizing their trips.

Report by Johann-Friedrich Luy

From October 12 to 15, 1996, a small delegation of the IEEE visited members of the IEEE Bulgaria Section and met with scientists at the University of Sofia. The colloquia team consisted of Wallace Read from the USA; 1996 IEEE President, Peer Larsen from Denmark; IEEE Region 8 Director, Pete Morley from the USA; IEEE Technical Activities Colloquia Chair, Wes Spencer from the USA; IEEE Power Engineering Society Representative, and Johann-Friedrich Luy from Germany, IEEE Electron Devices Society Lecturer.

Our first meeting was held on Saturday evening with the IEEE Bulgaria Section Chair, Jordan Kolev, from the Technical University of Varna. On Sunday morning, we were shown the 'sunny side' of Sofia. On the guided tour through Sofia we could see some of the famous buildings such as the 'Alexander Newski' cathedral, with a gold plated roof, the old Roman place of worship 'Sweti Georgi,' the small church 'Sweta Sofia' built during the 4th century, and the Russian church 'Sweti Nikolaj.' Also, we could see the UNESCO sight, the 'Boiana Church,' at the foot of Vitosha mountain near Sofia. We came back to the real world Sunday afternoon when we met Professors from Varna and Sofia universities.

In spite of strong economic difficulties, the IEEE Bulgaria Section develops a lot of activities, such as the IEEE Bulgaria Newsletter. The talks of Professors Kolev, Sgurev, Ivanov, Hristov, Phillipow, Kalykov and Grigof covered the field of DSPs, artificial intelligence, microwave techniques, antennas and radars, microelectronic technologies and interconnects, control theory and waveguide propagation. However, it



Johann-Friedrich Luy

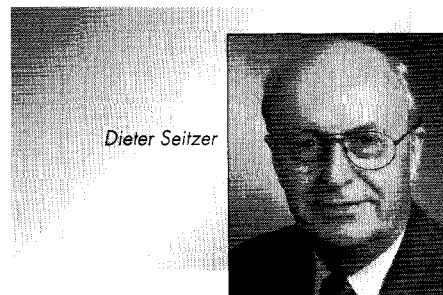
became obvious that the Bulgarian scientists have strong financial problems and nearly no support from the industry. International journals are missing and there is only the absolute minimum of infrastructure available. Pete Morley, IEEE TAB, promised to check whether the IEEE can support the IEEE Bulgaria Section with scientific material.

Monday, October 13th was the day of the lectures. In an overcrowded small lecture-hall, President Read presented his talk on 'The 21st Century Engineer.' He strongly emphasized the need of customer orientation for the engineers in order to build up a strong industry. Pete Morley explained the organization of IEEE and its information strategies. The students showed their interest by asking a lot of questions. Technical talks by Johann-Friedrich Luy on 'Silicon Based Millimeter Wave Devices' and by Wes Spencer on 'Maintaining Power Quality during Fault Conditions' led to stimulating discussions with the audience and to first technical contacts.

Summarizing the visit, I would state that there is a good scientific base in Bulgaria for engineering work. Due to the strong economic difficulties, however, there is weak support from the industry to the universities and there is a missing link between them. To support the Bulgarian scientists the IEEE will provide transactions and books as far as possible. Anyone who is interested should try to help provide support to the Bulgarian engineers and their IEEE section.

Report by Dieter Seitzer

During the IEEE TAB Colloquia, I gave my presentation on "University-Industry Cooperation in Microelectronics and its Applications" in Budapest, Hungary, Bucharest, Romania and Prague, Tchechia. It was attended by between 30 and 50 people,



Dieter Seitzer

mostly academics from universities and research institutes. A short summary is given as follows.

Starting from an illustrative example of innovative medical equipment, the SMI (small and medium industry) dilemma is introduced: High performance ICs at low volume. A market analysis reveals a variety of further needs of SMI which are served by a network of SCCs (support and competence centers) involved in European programs such as EUREKA-JESSI, ESPRIT, and LEONARDO. As a typical SCC, the institute of the author is described which belongs to the Fraunhofer-Gesellschaft for applied research in Germany. In this context, technology transfer provides an added value between research, development, and continuing engineering education.

The presentation took around 45 minutes and was followed by a lively discussion. From these discussions and many conversations during the stay, the following impressions were derived: In connection with the collapse of the communist system, both the market for industry products (which were before pretty well organized to serve the Soviet Union and their satellites) and the industry collapsed. Serving the world market is difficult because its technology is not competitive, although not being very far behind. For instance, in 1989, when the industry in Western Germany offered 4 Mbit memory chips, Eastern Germany was about ready to produce 1Mbit chips. The economic advantages now are lower wages and salaries. Therefore, western companies start joint ventures where technology and knowhow is provided from the outside and the work force comes from inside the country. For instance, in Hungary, the salary of an electrical engineer at a university before tax is about \$400/month, while in industry, it is

about twice or three times more. Because national private enterprises have tremendous difficulties to develop, many engineers work in trade and commerce to sell products that are imported. There are some show cases of new start-up companies that originally sold western software for business applications and now have developed via extensions and modifications to have their own products. This seems to indicate a chance for new business. Start with selling in areas where there is little investment needed, like software and extend from there as described above. We tried to convey the message that, in connection with production facilities for electronic equipment, there will be needs for some development and research. However, it is very uncertain to predict the speed at which the development of a national industry will take place.

Due to the fact that the universities still have engineering students that are educated on a pretty good scientific level, it could be ideal to use this surplus capacity for researching innovative subjects. There is some amount of funding available from the European Commission and also from national bilateral government agreements. For instance, the Fraunhofer Institute of the author has been involved in an EC project called EEMCN (Eastern European Micro-electronic Competence Network), where we support CAD of ICs based on workstations and software which we use to make industrial circuit designs that are manufactured in European foundries. Ten partners from 5 central and eastern European countries were involved with 2 institutes from Germany (Fraunhofer) and France (CMP). A second project is under way, and under the European program Europractice/FUSE (First User), a plan is in the works to support small companies in the countries visited and to use the contacts to universities that have been established during the visit for consultations in technology transfer and exchange of staff and students.

It would be very helpful if IEEE maintains connections to these countries and supports the individual members with material on the state of technology, training and career planning.

*Jerry M. Woodall
Purdue University
West Lafayette, IN*

EDS Members Elected to the IEEE Grade of Fellow

Effective January 1, 1997

Herbert S. Bennett — For contributions to modeling heavy doping and transport physics in semiconductors.

Franco Cerrina — For applications of synchrotron radiation to X-ray lithography, X-ray microscopy and X-ray optics delivery systems.

Alice M. Chiang — For contributions to signal processors using charge coupled devices.

Kwo Ray Chu — For contributions to the basic understanding of relativistic electron cyclotron interaction with electromagnetic waves and development of high power radiation sources based on such interactions.

Lynn F. Fuller — For contributions to engineering education.

Joseph M. Giachino — For contributions to micromechanical and microelectromechanical control systems.

Steven J. Hillenius — For contributions to the field of solid-state technology and its applications to integrated circuits.

Hiroshi Iwai — For contributions to ultra-small geometry CMOS BiCMOS devices.

Howard Leo Kalter — For contributions to the development of DRAM.

Joseph Michael Killiany — For managerial leadership in the development of infrared focal plane arrays and for contributions to the development of radiation hard charge coupled devices.

Mitsumasa Koyanagi — For the invention of the stacked capacitor DRAM cell.

Hisham Zakaria Massoud — For contributions to the understanding of silicon oxidation kinetics, ultrathin gate dielectrics, and the Si-SiO₂ interface.

Nicholas J. Moll — For contributions to the development of hetero-junction quantum electronic devices.

Akira Ohte — For contribution to and leadership in the development of a fully automatic nuclear quadrupole resonance thermometer and its application to precise temperature measurement.

Marius K. Orlowski — For contributions to the modeling of MOSFET devices and technology.

Anthony Michael Pavio — For developments in broadband active and passive GaAs monolithic mixers, and for contributions to microwave circuit technology.

Thomas P. Pearsall — For the synthesis and development of InGaAsP materials and photodetectors for optical communications.

Robert Piloty — For contributions to and leadership in the development of hardware design languages, of microelectronic CAD systems, and of early computers.

Roger David Pollard — For contributions to the development of microwave and millimeter-wave measurements, and active device characterization.

Gabriel M. Rebeiz — For the development of novel microwave and millimeter-wave antennas, receivers and circuits using micromachining techniques.

Zong Sha — For technical leadership in radiowave-propagation research, practice, and education.

T.C.L. Gerhard Sollner — For pioneering the development of resonant-tunneling structures and contributions to the understanding of high-speed semiconductor devices.

Geoffrey Walter Taylor — For the invention and development of several III-V inversion channel devices.

Osamu Wada — For his contribution to III-V semiconductor Optoelectronic Integrated Circuit (OEIC).

Cheng Paul Wen — For contributions to the invention and the development of coplanar waveguide based microwave integrated circuit and monolithic microwave integrated circuit techniques.

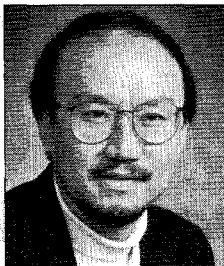
EDS Regions 1-6, 7 & 9 Chapters Meeting

The first-ever Electron Devices Society Regions 1-6, 7 & 9 Chapters Meeting was held on December 8, 1996 at the Hilton and Towers Hotel in San Francisco, CA. There were seventeen chapters (including two student branch chapters) represented at the meeting, with a total attendance of more than forty. Several representatives from EDS' Region 8 and 10 chapters also attended and participated actively throughout the discussion. The meeting started at 5:00 p.m. and was moderated by the EDS Newsletter Editor and San Diego Chapter Chair, Paul Yu.

The meeting consisted of three consecutive parts. The first part was a review of the various resources and services available to EDS chapters and members. These included: the Chapter Subsidy Program (presented by Shojiro Asai); the Distinguished Lecturer Program (by Ilesanmi Adesida); the Videotape Lending Library for IEDM Short Courses (by Paul Yu); the STAR Program (by Julia Brown); and the Newsletter (by Krishna Shenai). The second part was devoted to chapter reports and the third was an open discussion focused on issues of interest to the chapters.

This meeting was aimed at expanding the dialogue between chapters in these

Cary Y. Yang



regions and the EDS AdCom. Each chapter presentation lasted about five minutes followed by a short discussion. As it turned out, the meeting far exceeded its original expectations. Many chapter representatives showed strong interest in the various services and programs that are available, such as the Videotape Library and Distinguished Lecturer programs. Of particular interest to the chapters was the funding support provided by the Society for various chapter activities (including travel expenses for distinguished lecturers) and to allow chapter officers to attend regional chapter meetings. Many issues concerning chapter activities and Chapters-AdCom communications were raised and were extensively discussed. Overall, participants were very pleased to have the opportunity to meet

Paul K. L. Yu



each other and voice their opinions.

The discussion was centered on the two main issues of how AdCom can help further promote the chapter activities, and how the chapters can better serve the EDS members. On the first issue, it was suggested that IEEE improve its delivery time of IEEE Spectrum Magazine to Region 9 members. It would also help the local chapter's publicity if the society could set up a procedure for establishing an internet web site for each chapter. Cary Yang also discussed the plan for an EDS Chapters Manual that would contain essential information for chapter officers. It was commented that financial subsidies have been very helpful for chapters undergoing major membership growth. On the second issue, much discussion was focused on chapter meeting attendance. Many suggestions were made and some of them are summarized as follows.

- Local industry should be solicited for technical meetings.
- The chapter should coordinate with local IEEE sections for meeting announcements.
- Neighboring chapters should coordinate their technical meeting arrangements.
- The chapter should provide continuing education for its members.
- Regional competition on science projects should be sponsored by chapters and AdCom to promote student member activities.

The meeting ended around 10:30 p.m. Several chapter representatives stayed afterwards to further discuss various issues with AdCom members and the meeting organizers. Many expressed the wish that this meeting would become an annual event, possibly to be held during IEDM.

Cary Y. Yang
Santa Clara University
Santa Clara, CA

Paul K. L. Yu
University of California at San Diego
La Jolla, CA

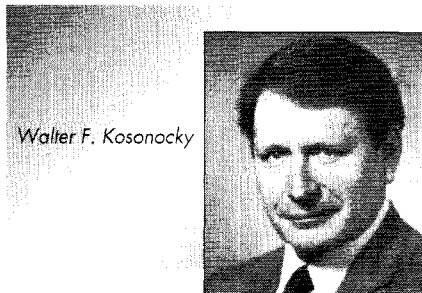
WALTER F. KOSONOCKY

The electron device community lost a leader when Walter F. Kosonocky died suddenly on November 2nd. Born in Poland in 1931, he came to the U.S. in 1948 and received an Sc.D degree from Columbia in 1965. He was at the RCA Sarnoff Labs for over 30 years, and more recently was a Distinguished Professor at the New Jersey Institute of Technology.

Walter was a prominent researcher in lasers, CCDs and solid-state imagers, and received many honors, including the EDS J.J. Ebers Award (1985), IEEE Fellow (1975), and the National Academy of Engineering (1992). He held 70 patents and authored over 90 papers. His many professional activities included the EDS AdCom, ED Transactions associate editor and guest editor of four special issues, Program Chairman of ISSCC, and co-founder and first Chairman of the Symposium on VLSI Technology.

"Walter held the amazing ability to work with people on both technical

Walter F. Kosonocky



issues and as a person. He would accomplish things that other people had given up as too difficult," said Pallab Chatterjee of Texas Instruments. Jim Clemens, of Bell Labs, Lucent Technologies, remembers "Walter was technically astute, a tireless worker, and a warm and enthusiastic person who was a delightful colleague. He will be remembered fondly by his many friends."

Lewis M. Terman
IBM Research Center
Yorktown Heights, NY

Summary of the December 1996 AdCom Meeting

A meeting of the Electron Devices Society Administrative Committee (AdCom) took place at the Hilton and Towers Hotel, in San Francisco, CA on December 8, 1996, preceding the International Electron Devices Meeting (IEDM). The following are some of the highlights of the meeting.

In his **PRESIDENT'S REPORT**, Lou Parrillo reviewed his goals for 1996-97. These goals were published in the October 1996 issue of the EDS Newsletter, but his updated comments will be reported here.

- Expand the number of members on each of the standing committees — This should encourage the generation of new ideas and reduce the workload of individuals on each committee; each "team" will produce a set of goals for their committee.

- Expand membership and find a more effective way to retain current members — Marv White is stepping down as the Membership Chair, and will be replaced by Paul Chow. In May, a successful recruitment effort took place, and a study is being considered to determine why members leave EDS. Another effective instrument in expanding membership is the current activity to create new chapters, particularly in Asia and Eastern Europe. Considerable discussion took place regarding extending these activities to Latin America. Furthermore, an EDS membership directory is currently being developed by the Executive Office and several members of the ExCom and will be fashioned after the LEOS Membership Directory.

- Continue to enhance the society's educational activities — Under Jerry Woodall's dynamic leadership, the Distinguished Lecturer Program has expanded significantly, at a lower total cost than in the past.

- Journal enhancements — Two areas were targeted for emphasis this year, reduction of journal cycle time, and electronic publishing. The former has been an effort for some time, and will continue to be so, whereas considerable effort has recently been made to solve technical problems for electronic publishing.

- Revamping the Technical Committees — These committees are meant to keep the EDS in close touch with new technical ideas and trends - what will be the "hot" areas of R&D in the future. The ExCom believes this is not working as well as it should, and that it needs significant restructuring.

A proposal will be forthcoming, but, meanwhile, your ideas are encouraged.

AWARDS PRESENTATIONS — Lou Parrillo presented a number of certificates of appreciation:

- Tak Ning, Roger Van Overstraeten and Toshiaki Ikoma — For serving as Elected Members-At-Large of AdCom for the period 1991-1996.

- Linda Dreisbach — For outstanding service for the past 10 years as Membership Secretary.

- Marv White — For outstanding service for the past 10 years as Membership Chair, Chapter Chair, and Education Chair.

EXECUTIVE COMMITTEE MEETING

— Bruce Griffing then gave a brief summary of the ExCom Meeting held on December 7. Highlights included:

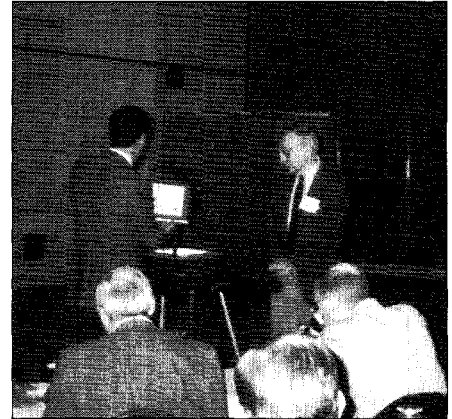
- The EDS Newsletter will be soon be available on the World-Wide Web.

- Jerry Woodall will discuss a Sloan Foundation initiative in his report.

- ExCom agreed to provide some travel support (if necessary) for the winners of the EDS Ebers, Rappaport and Distinguished Service awards to attend the presentation ceremonies at the IEDM.

- An update on Region 8 Activities (Europe, Middle East & Africa) was presented by Mike Adler. Meetings for this region have been held in Grenoble, Edinburgh, The Hague, and Prague. Although only six members were in attendance at the first meeting, 60 attendees were present at Prague, representing 38 chapters from 24 countries. The chapter outreach program is clearly successful! AdCom commented that the EDS is leading all other IEEE Societies in this area. There was a proposal made to extend the support being provided for memberships and publications for 11 chapters in Eastern Europe through 1999. It was unanimously approved.

- Jim Clemens summarized activities in Region 10 (Asia & Pacific), for which he and Kunio Tada are responsible. A "Sister Society" agreement has been established with the Institute of Electronics Information and Communications Engineers (IEICE) in Tokyo, Japan. In a joint effort with AdCom member, James Kuo, application brochures have been developed in both Chinese and Japanese.



EDS President, Lou Parrillo, presents Marv White with a plaque in recognition of his past 10 years of service in various EDS positions.

Lu Kasprzak gave the **TREASURER'S REPORT**, which indicated that the society continues to maintain good financial health. The expected surplus for 1996 (\$406.4K) is higher than originally projected primarily due to a larger than expected surplus from conference activity. The 1996 surplus is expected to be further increased, since the long-term investment return is expected to be even higher than the budgeted figure of \$170K. As of year-end 1996, EDS reserves total about \$3.6 million.

In his **EXECUTIVE DIRECTOR'S REPORT**, Bill Van Der Vort provided a detailed account of the many activities handled by the EDS office at the IEEE Operations Center, including expansion of the standing committees, regional chapters meetings, membership drives, membership directory, brochures, "Meetings' Best Practices" Workshop, and plans to focus on Region 9 (Latin America) for future EDS expansion. Lou Parrillo added his praise for the efficiency and dedication of all three of the office workers.

REGIONS/CHAPTERS CHAIR'S REPORT — Cary Yang. Several items of interest were described in this report:

- Cary had a meeting in August with several chapter officers in Tokyo. Cary suggested to chapter officers to consider splitting the chapter into two or three chapters. After extensive discussion, it was decided NOT to split the Japan Chapter, because the members are primarily in Tokyo, and the other members are spread rather evenly all around Japan.

(continued on page 19)

Regional and Chapter News

USA, Canada & Latin America (Regions 1-6, 7 & 9)

ED Lehigh Valley Chapter Sponsors a Technology-Career Day

The ED Lehigh Valley Chapter, with cooperation from a local elementary school teacher and the public relations office of Lucent Technologies - Microelectronics Group in Reading, Pennsylvania, sponsored a technology-career day for a group of gifted fifth-graders. The group consisted of eight students, six boys and two girls, two parent escorts and the teacher. The group was hosted by Ayman Shibib, the ED Lehigh Valley Chapter Chair who is a distinguished member of the technical staff at Bell Labs, Lucent Technologies.

The ED Chapter activities focused on exposing the students at the elementary stage to careers in science and technology in the microelectronics field. The goal was to give students a perspective on different careers and academic degrees required to work in this field, and to increase their interest in engineering. The visit started with a 15-minute videotape about Lucent Technologies' two main divisions in Reading, Optoelectronics and Integrated Circuits, and its typical products.

The group then toured different areas of the facilities. The students toured the Computer-Aided-Design (CAD) area where they saw layouts of integrated circuits used in telecommunications equipment, after which they toured the video-preparation and Art Graphics areas where they saw displays of different products. There was then a tour of the manufacturing areas of the Integrated Circuits cleanroom and the Optoelectronics cleanroom, where the group was shown the cleanroom garments and told about cleanroom requirements. The tour also included some of the support areas such as the machine tool room, the glass-blowing area, the employee computer training room, the medical department and the fitness center.

After the tour, the group visited a semiconductor device characterization laboratory. There, Dr. Shibib showed the students, via a TV-camera connected to a high power microscope, typical integrated circuit chips used in telecommunication equipment, relating some of the dimen-

sions to the size of a human hair. He also discussed the properties of the basic elements used in microelectronics and showed the students typical measurements of transistor characteristics. Furthermore, Dr. Shibib explained the different academic requirements needed for people working in the microelectronics field, and encouraged the students to pursue higher education in science and engineering.

— M. Ayman Shibib, Editor

ED/MTT Oregon Chapter

— by Rao Gudimetla

We have 180 members in the chapter, of which 125 are Electron Devices Society members. Over the past six months we have held three technical meetings. On May 10, Dr. Madhu S. Gupta of Hughes Aircraft and Florida State University presented a talk on "MCM Technologies for High Speed and RF Systems" and Eric Strid of Cascade Microtech in Beaverton presented a talk on "Wafer Probing in the Year 2000." On December 1st, Mali Mahalingam of Motorola, Phoenix lectured on "Electronic Packaging Design Principles." All of these talks were well attended, with an average attendance of 37.

In January, the chapter executive committee will meet to plan the 1997 technical meetings. We expect to hold three technical meetings in the first half of 1997, plus a one day workshop. For further information, please contact the Chapter Chair,

Prof. Vijai K. Tripathi, TEL: (541) 737 2988, FAX: (541) 737-1300, E-mail: vkt@ece.orst.edu.

Report on MBE '96

— by Dwight Streit

The Ninth International Conference on Molecular Beam Epitaxy (MBE-9) was held in the USA during the week of August 5-9, 1996, with over 400 scientists, engineers, and students in attendance. The site of the conference was the spectacular Pepperdine University campus in Malibu, CA. Its beautiful scenery and sunny weather provided a perfect setting for both scientific and social interactions. MBE-6 was held in 1990 in La Jolla, CA, while MBE-7 and MBE-8 were held in Germany (1992), and Japan (1994), respectively. MBE-10 will be held in France in 1998.

There has been tremendous growth in molecular beam epitaxy technology and applications, since the first international conference was held 16 years ago. MBE is now being used not only to create the most advanced new materials and device structures, but also to fabricate advanced microwave, optoelectronic, and photonic devices for production applications. The plenary session reflected this ongoing evolution, with overview talks on both research and industrial applications of MBE-based products, system insertions, and new MBE materials and technologies. Nearly 400 abstracts from 27 countries



A group of gifted Fifth-Graders, their teacher (far left), and parent-escorts were hosted by Lehigh Valley ED Chapter Chairman, M. Ayman Shibib (right) at Lucent Technologies Microelectronics Group facility in Reading, Pennsylvania on Dec. 3rd, 1996, for a Technology-Career Day.

were reviewed for the conference, and the most recent advances in MBE-based material growth, characterization, and devices were presented through 110 presentations in 15 oral sessions and 142 posters in 4 poster sessions. The conference proceedings will be published in 1997 as a special issue of the *Journal of Crystal Growth*.

Report on SISC '96

— by Doug A. Buchanan

The 1996 Semiconductor Interface Specialists Conference (SISC) was held December 5-7, 1996 at the Catamaran Hotel in San Diego, California. The SISC provides a unique forum for device engineers, solid-state physicists, and material scientists to discuss issues of common interest.

SISC '96 included six invited speakers. M.V. Fischetti, of IBM's T.J. Watson Research Center, presented results on Monte Carlo Simulation of MOS Devices. The advances towards thinner and thinner gate dielectrics and their applications for advanced MOS devices were discussed by H.S. Momose of Toshiba Microelectronics Laboratory, Japan in her talk entitled, "Thin Gate Dielectrics for Future CMOS Applications." G. Groeseneken of IMEC, Belgium, gave new insights to the impact of the breakdown mechanisms on the statistics of intrinsic and extrinsic breakdown of thin oxides. Also concerning the reliability of MOS devices, Prof. J. W. Lyding of The Beckman Institute, University of Illinois at Urbana-Champaign, presented new data on STM Nanofabrication and Deuterium Post Metal Annealing of MOSFETs for Improved Hot Carrier Reliability. Useful insight on the Si/SiO₂ interface was discussed by M.C. Downer of the University of Texas at Austin in his talk entitled, "Second Harmonic Spectroscopy of the Si (001) Interfaces Using Femtosecond lasers." Silicon carbide (SiC) has potential advantages for high voltage/high temperature applications and T. Ouisse from ESNERG, Grenoble, France presented a talk entitled, "Electron Transport at the SiC/SiO₂ Interface."

Contributed papers were given in sessions on topics including Silicon Carbide, Monte Carlo Simulations of MOS Devices, Oxide Degradation, Oxide Defects and Interface Characterization, thin gate dielectrics and nitrogen effects.

The 1996 Ed Nicollian Award for Best Student Paper went to Jan De Blauwe of IMEC, Belgium for his paper entitled, "Degradation and Nitridation Dependence of Steady-State Stress Induced Leakage Current (SILC)." The award consisted of a

small honorarium and a plaque commemorating the event.

The conference attendance was about 130, which was similar to the 1995 attendance. There was a total of 43 contributed papers. A poster session was held on Thursday evening which included a spread of hors d'oeuvres and wine (to encourage lively exchanges, which of course, it did). On Friday evening, a reception and banquet was held. It was culminated with the annual limerick contest won by C-M Zetterling, KTH, Sweden.

The SISC is a small conference without any parallel sessions. Typically, the attendance is between 120 and 150 which is perfect for enabling the exchange of information in both formal presentations and informal discussions, and therefore, SISC '96 was deemed to be a success. The 1997 SISC, will be held December 4-6 in Charleston, SC.

For further information, please contact D.A. Buchanan (SISC '97 - General Chair), TEL: (914) 945-3175, FAX: (914) 945-2141, E-mail: buchan@watson.ibm.com.

Paul K.L. Yu, Editor

Europe, Middle East & Africa (Region 8)

ED Sweden Chapter

— by Mikael L. Ostling

The chapter has been able to maintain its high ambition to arrange at least one technical meeting each month during the past Fall. We have been fortunate to receive very prominent lecturers.

On September 27th, IEEE Fellow, Prof. Frank S. Barnes, of the University of Colorado, gave a lecture on "Voltage Controlled Ferroelectric Phase Shifters."

On October 24th, Assoc. Prof. Harry J. Whitlow, of Lund University, gave a very enthusiastic lecture on "Front line Semiconductor Detector Technology." Dr. Whitlow also showed a very good example on a completely computerized lecture taking full account of the sophisticated lecture room we have at our disposal in Electrum, the site of our ED Chapter.

On December 2nd, we had the pleasure of welcoming a new Senior Member from our own ED Chapter Ted Johansson, Ericsson Components AB, who gave a very appreciated talk entitled, "RF Power technology for cellular base stations: Silicon Transistors for Quarter-HP (horse power!) Power Output at GHz Frequencies."

The last technical seminar for the Fall

semester was presented by Prof. J. Peter Krusius, of Cornell University, on "Design and Fabrication of Sub-100 nm CMOS Devices."

During the Spring 1997 semester, we plan to continue the same intensive program. A dedicated silicon technology symposium will be arranged in the May-June period with a few invited Swedish presentations. Moreover, we are hoping that one video short course on bipolar technology rf design aspects will be presented.

During 1997, the ED Sweden Chapter will co-sponsor/co-organize the following conferences: GigaHertz '97 in Kista-Stockholm, October 23-24, 1997, and the International Conference on Silicon Carbide and III-Nitrides (ICSCIII-N'97) in Stockholm, Aug 31 - Sept 5 1997.

The GigaHertz '97 is a Swedish national symposium on radio, radar, telecommunication and automotive electronics applications. We expect 150-200 participants. For further information, please contact the conference secretariat: TEL: +46-8-7521405, FAX: +46-8-7527782, E-mail: ghz97@ele.kth.se, The General Chair is Prof. Mikael Östling. There will also be a home page at www.ele.kth. A call for papers will be distributed in June of 1997.

— Mikael L. Ostling, Editor

MTT/ED/AP/LEO UKRI Chapter

— by Neil Williams

Some twenty-five chapter activities were held during 1996. A number of the Chapter's events for 1997 are still not finalized. You can be sure, however, that the program will be just as varied and exciting as in previous years. On April 9th and 10th, the Chapter is sponsoring a two-day course on NEC (Numerical Electromagnetic Code), organized by ACES(UK) at Imperial College in London. Also in April, distinguished lectures by Tatsuo Itoh (Microwave Theory & Techniques Society) and Gabriel Rebeiz (Antennas and Propagation Society), who are visiting the UK towards the end of the month, are being arranged. In May, we are welcoming an EDS distinguished lecturer, Johannes Stork, who will be giving a talk on "Silicon-Germanium Bipolar Technology: the First Ten Years." During the next two months, details will be confirmed for presentations on "The Uses of Radar Sensors in Health and Agriculture Within the Third World" and "The Design of Power Amplifiers for Mobile Communications Systems."

Later in the year, a number of popular annual events are being staged again,

including the Third High Frequency Post-Graduate Symposium at the University of Leeds, the Fifth International Workshop on "High Performance Electron Devices for Microwave and Opto-Electronic Applications" at King's College, London, and the Chapter's membership booth at the Microwaves and RF Exhibition at Wembley, London. On December 3rd, an evening lecture will be given by David Palmer of Philips Broadband Networks on Microwave Video Distribution Systems (MVDS) at King's College, London.

For further information, please contact: Chapter Chair: Neil Williams, ERA Technology Limited, Cleeve Road, Leatherhead, Surrey KT22 5AA, UK. TEL: +44 (0) 1372 367061, FAX: +44 (0) 1372 367099, E-mail: neil.williams@era.co.uk.

ED/MTT Egypt Chapter

— by Ibrahim Salem

The chapter held the following meetings from October to December of 1996:

- November 7th, 1996 — Administrative — to discuss the borrowing of EDS videotape courses
- November 28th, 1996 — Scientific — "On the Design of Gbits/s BiCMOS Circuits and Systems"
- December 26th, 1996 — Tutorial — "Waveguides and Cavity Filters"

At the end of November, 1996, the Chapter began the practice of holding meetings regularly on the last Thursday of each month.

The Ain Shams University Faculty of Engineering held the 8th International Conference on Microelectronics, sponsored by the IEEE, in the Sheraton Gezira Hotel, Cairo, from December 16 to 18, 1996.

For further information, please contact Chapter Chair: Professor Ibrahim A. Salem, 17 Elqouba Street/3, Roxy Heliopolis, Cairo — 11341, Egypt, TEL: 202-349-8214, FAX: 202-263-6802, E-mail: isalem@brainy1.1e-eg.com.

ED/MTT Greece Chapter

— by Nikolaos Uzunoglu

Activities carried out by MTT/ED Greece Chapter included a visit in early December 1996 of 60 students from the Electrical Engineering Departments-Faculties of Yugoslavia and FYROM. Intensive courses in the fields of telecommunications, computer engineering and electronics were organized for the 60 final year students from the electrical engineering faculties of the Universities of Banja Luka (Bosnia-Rep.Srpska), Belgrade, Podgorije, Nis, Novi Sad and Skopje. During the visit by

the students, which lasted 12 days, trips were taken to OTE (Hellenic Telecommunication Organization) and historical monuments (Ancient Olympia, Kalabrita and Akropolis). Future planned activities include:

- Publication of a volume summarizing the best papers presented at the Trans Black Sea Symposium on Applied Electromagnetism (March 1997)

- Organization of Training Seminars on MMIC Design and Evaluation to NTUA and other Greek University students (April 1997)

For further information, please contact the Chapter Chair: Professor Nikolaos K. Uzunoglu, National University of Athens, Dept. Electrical & Computer Eng., Division of Electrosience, Heroon Polytechniou 9 Street, Zografou 15773, Athens, Greece. TEL: 30-1-77223556, FAX: 30-1-7723557, E-mail: nuzu@zeus.central.ntua.gr.

ED Israel Chapter

— by Gady Golan

At the time of writing this report, plans were proceeding with the IEEE-EDS Israel and Israeli Vacuum Society (IVS) meeting for January 6th 1997 at the Center For Technological Education — Holon — Auditorium Eilon. The subject of the meeting "MBE and MOCVD structures and devices," is planned based on IEEE videotapes with speakers presentations by Dr. D. Miller, Dr. G. Robinson, Dr. S. Lyer and Dr. P. Dapkus. Live presentations include "Introduction to MBE and MOCVD technologies" by Dr. Gady Golan from the Center for Technological Education, "Advanced method for heterostructure characterization" by Dr. Yossi Rozenwaks from Tel Aviv Univ, "MBE Technologies and Heterostructures" by Dr. Boaz Brill of EL-OP, and "Etching Processes in Microelectronics" by Dr. Edna Manheim of INTEL Jerusalem. Participation is planned to be free with a welcome to all. For details of the event, please call Gady Golan at: 972-3-646-0329.

For further information please contact the Chapter Chair: Professor Nathan Croitoru, Tel-Aviv University, Faculty of Engineering, Dept. of Physical Electronics, Tel-Aviv 69978, Israel, TEL: 972-3-640-8138, FAX: 972-3-642-3508, E-mail: croitoru@eng.tau.ac.il.

— Terry Oxley, Editor

ED/MTT France Chapter

— by Robert Adde

The fourth European GALLIUM ARSENIDE

APPLICATIONS SYMPOSIUM (GaAs '96) was held in Paris, France, June 5-7, 1996. The IEEE ED and MTT societies, the ED/MTT France Chapter and the France SEE technically co-sponsored the meeting. The Chapter was strongly involved in the conference organization. The General Chairman, C. Rumelhard, the Secretary D. Pasquet, and the Workshop Chairman, P. Dueme, are members of the Chapter committee. The aim of the conference was to promote the discussion on recent developments and trends, and exchange scientific and technical information in the area of applications of gallium arsenide and other III-V compound semiconductor devices and circuits. The program of the first two days included 7 invited papers in 4 sessions, 39 oral contributions in 6 sessions and 29 posters in 4 sessions. The audience of nearly 200 scientists brought lively discussions. On the third day, a workshop took place regarding the CAD aspects of III-V MMICs. This workshop is organized every year in a different country in cooperation with the European MTT chapters. The four sessions covered present and future European actions in the field, modeling aspects, and design tools. They included 7 invited papers and 9 oral contributions. The available 400 pages of GaAs '96 gathers the full length manuscripts of nearly all authors.

GaAs '97 will be held in Bologna, September 3-5, 1997. V.A. Monaco will be Chair. For further information, E-mail: gaas97@deis.unibo.it.

The Chapter held its biannual General Assembly, on October 11th, 1996, in Paris. It included two invited talks by: Dr. Kikuo Wakino from Murata Inc., Kyoto, Japan, an MTT-S Distinguished Lecturer, who gave a lively presentation on "Miniaturization Techniques of Microwave Components for Mobile Communication Systems using Low Loss Dielectrics"; and Dr. Derek Smith, from Philips Microwave, Lemeil France, who gave a broad and deep overview. At the assembly which followed, a committee election took place. The ED/MTT France Chapter has a limited two-year term for its officers, in order to regularly have new people become involved in the chapter committee and in IEEE activities. The chapter officers elected for the 1996-1998 term were:

- Chair: Henri Baudrand (ENSEEHT, Toulouse, France, TEL: 33 05 61 58 82 46; FAX: 33 05 61 58 83 77; E-mail: baudrandh@len7.ensee.fr)

- Vice-Chair: Christian Rumelhard (CNAM, Paris, France, TEL: 33 01 40 27

21 79; FAX: 33 01 40 27 24 81; E-mail: rumelhard@cnam.fr *ume*)

They may be contacted for further information concerning the Chapter.

ED Germany Chapter

— by *Klaus Heime*

The ED Germany Chapter had the pleasure of having the EDS Distinguished Lecturer, Prof. Dr. Hadis Morkoc, from the University of Illinois at Urbana-Champaign give a very interesting talk on "Optoelectronic and Electronic Devices Based on III-V Semiconductor Nitrides." The lecture was attended by approximately 40 people from universities and industries in the Aachen area. A vivid discussion demonstrated the competence of the speaker and the strong interest of the audience in the subject presented.

— *Robert Adde, Editor*

Asia & Pacific (Region 10)

ED/LEO Australia Chapter Report on COMMAD '96

— by *Chennupati Jagadish*

The 1996 Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD '96) was held in Canberra from December 8-11, 1996. The conference was opened by Senator Amanda Vanstone, Hon. Minister for Education, Employment, Training and Youth Affairs of the Australian Government. Professor Deane Terrell, Vice-Chancellor, Australian National University, Professor Sue Serjeantson, Deputy Vice-Chancellor and Director of The Institute of Advanced Studies and Professor Erich Weigold, Director of the Research School of Physical Sciences and Engineering participated in the opening ceremony of the conference. The conference was attended by 150 participants from 13 countries. Eleven invited, 32 oral and 101 poster papers were presented. Best student papers were awarded first and second prizes in both oral and poster categories. Winners of the student prizes were as follows: Oral- First Prize: Mr. Geoff Facer, University of New South Wales, Oral- Second Prize: Mr. Phil Tanner, Griffith University, Poster- First Prize: Mr. Andrew Campitelli, Royal Melbourne Institute of Technology, Poster- Second Prize: Ms. Cynthia Leung, Macquarie University. COMMAD '96 was sponsored by the Electron Devices Society, Lasers and Electro-Optics Society, IEEE ACT Section, IEEE ED/LEO Australia Chapter, Australian Materials Research Society and Australian Institute of Physics. Refereed conference

proceedings will be published by IEEE and copies of the proceedings can be purchased from IEEE.

COMMAD '98 will be held in December, 1998 in Perth, Australia and will be chaired by Prof. Laurie Faraone (E-mail: faraone@ee.uwa.edu.au, TEL: 61-9-380-3104, FAX: 61-9-380-1065).

IEEE Distinguished Lecturers, Prof. Hadis Morkoc (University of Illinois at Urbana-Champaign) and Dr. Kevin Lear (Sandia National Laboratories), visited the Australia Chapter in December 1996. Prof. Morkoc gave a seminar in Sydney (School of Mathematics, Physics, Chemistry and Electronics, Macquarie University) and an invited talk at COMMAD '96. Dr. Lear also gave seminars at Melbourne (Photonics Research Laboratory, University of Melbourne) and in Sydney (Optical Fibre Technology Centre, University of Sydney). Dr. Lear also gave an invited talk at COMMAD '96.

For further information, please contact Chapter Chair: C. Jagadish, TEL: 61-6-249-0363, FAX: 61-6-249-0511, E-mail: cxj109@rsphysse.anu.edu.au.

ED/MTT India Chapter

— *K.S. Chari*

The chapter efforts have recently been focused on three aspects: a drive to increase membership and student participation in ED activities; utilizing the services of EDS' IEDM videotape library; and the IEEE Distinguished Lecturers. The membership drive helped in attracting interests of many prospective student members and resulted in the enrollment of 3 new students in EDS. The Chapter has taken upon itself the task of subsidizing the membership fees to further accelerate new enrollments. Two IEDM videotape short courses, "Low Voltage and Low Power Devices" and "Semiconductor Manufacturing," were obtained by the Chapter using the loan facility. The first was screened at academic institutions in November, 1996. The course has attracted interest of the student and research community. Prof. Krishna Shenai, an EDS Distinguished Lecturer, visited India December 28-31, 1996. He gave a one-day workshop entitled, "Application Specific Power Semiconductor Devices" at the Department of Electronics, New Delhi, and a lecture on "Recent Developments in Power Devices and Power ICs" at IIT Delhi under the Chapter activities. These were widely attended by Indian semiconductor industry and student/research communities.

For further information, please contact

the Chapter Chair: K.S. Chari, TEL: 91-11-4361464, FAX: 91-11-4363082, E-mail: chari@xm.doe.ernet.in.

ED Malaysia Chapter

— by *Burhanuddin Yeop Majlis*

The ED Malaysia Chapter will organize the National Symposium on Microelectronics in November of 1997. The purpose of this symposium is to enable all researchers, managers and engineers in microelectronics to discuss the current status of microelectronics activities in Malaysia and to present their research work. The symposium will be held in Penang.

For further information, please contact the Chapter Chair: Burhanuddin Yeop Majlis, TEL: 603-829-2928, FAX: 603-825-9080, E-mail: burhan@eng.ukm.my.

AP/MTT/ED Thailand Chapter

— by *Narong Yoothanom*

The AP/MTT/ED Thailand Chapter started its activities in the later part of 1996 and elected its committee. We are planning to organize an International Seminar on Antennas and Propagation in association with Chulalongkorn University and the King Mongkut Institute of Technology, Ladkrabang from May 21-23, 1997 in Bangkok. Several lectures with domestic and international speakers have been planned. We are also planning to have a social get-together of the chapter members at the end of the year. For further information, please contact the Chapter Chair: Narong Yoothanom, TEL: 662-252-7178, FAX: 662-253-6161.

— *Chennupati Jagadish, Editor*

ED Tokyo Chapter Report on ISSM '96

— by *Takeshi Hattori*

The 5th International Symposium on Semiconductor Manufacturing was held in Tokyo from October 2 to 4, 1996. More than one thousand participants attended the symposium which was jointly sponsored by the Ultra Clean Society, IEEE-EDS, and SEMI. This symposium has provided a highly interactive forum for people in the semiconductor and related industries, as well as the academic community to share experience and knowledge and exchange opinions on semiconductor manufacturing from a scientific point of view. This year, 47 papers were selected for oral presentation and 32 papers for poster presentation. In addition, 11 invited speakers described the burning issues such as global manufacturing strategies and partnerships, next-generation fab and

equipment, industry-university collaboration, and environmental friendly manufacturing. The symposium covered a wide variety of topics, such as fab design and management, information systems, yield enhancement, ultra clean technology, equipment/process/material optimization and innovation, manufacturable device structures, and environmental issues.

ISSM'97 will be held in San Francisco from October 6 to 8, 1997. For further information, please contact: Meetings Plus, TEL:510-284-4040, FAX:510-284-4161; E-mail: ISSM97@meetingsplus.com.

Report on PVSEC-9

— by Akira Yamada

The 9th International Photovoltaic Science and Engineering Conference was held at the SEAGAIA Convention Complex, World Convention Center Summit, in Miyazaki Japan from November 11th to 15th, 1996. There were 594 participants in attendance from 29 countries, with 338 papers and 52 invited papers being presented. Both invited and contributed papers stimulated intensive discussions on hot topics such as crystalline and amorphous Si solar cells and modules, chalcopyrite materials and solar cells, very-high efficiency III-V solar cells, low-cost CdTe cells, modules and BOS components for building integration and applications for terrestrial and space systems. In addition, special symposia were scheduled for five areas including: "Modern Module Technologies and Advanced Concepts," "Perspectives of High-Efficiency Polycrystalline Si Solar Cells," "Approaches for Low-Cost Fabrication of a-Si Solar Cells," "Space Solar Cells and Systems" and "High-Efficiency CIS-Based Thin Film Solar Cells and Modules."

The 2nd WCPEC (World Conference on Photovoltaic Energy Conversion) which will be held in Vienna, Austria in 1998, will combine the following meetings: The 10th International Photovoltaic Science & Engineering Conference (PVSEC); the 15th European Photovoltaic Solar Energy Conference & Exhibition (PSEC); and the 27th Photovoltaic Specialists Conference (PVSC). The 11th PVSEC will be held in Japan in 1999. For further information, please contact: Prof. T.Saitoh, Tokyo Univ. of Agri. and Tech., Tokyo, Japan, TEL: +81-423-88-7108, FAX: +81-423-85-9055, E-mail: tadashi@cc.tuat.ac.jp.

— Hiroshi Iwai, Editor

ED Beijing Chapter

— by F.J. Liao

From December 24 to 26, 1996 Dr. Krishna Shenai, an EDS Distinguished Lecturer from The University of Illinois at Chicago,

visited the IEEE/EDS Beijing Chapter. During his stay in Beijing, he visited the Microelectronics Research Institute of Tsing Hua University, the Microelectronics R&D Center of the Chinese Academy of Science, and the High Power Microwave Vacuum Devices National Laboratory of Beijing Vacuum Electronics Research Institute (BVERI). He also gave an excellent lecture at the Microelectronics R&D Center of Chinese Academy of Science on the topics of Power Electronics and Low Power IC Technology. The Beijing Chapter has received a complimentary copy of both the 1995 and 1996 IEDM Technical Digests from the Electron Devices Society. Four meetings were held in Beijing, Nanjing, and Xi'An to introduce the recent progress of electron device technology published in the IEDM in the field of vacuum microelectronics, deep sub-micron device modeling, and simulation.

ED Taipei Chapter

— by S.C. Sun

The 1997 International Symposium on VLSI Technology, Systems, and Applications will be held in Taipei, Taiwan, R.O.C. June 3 -

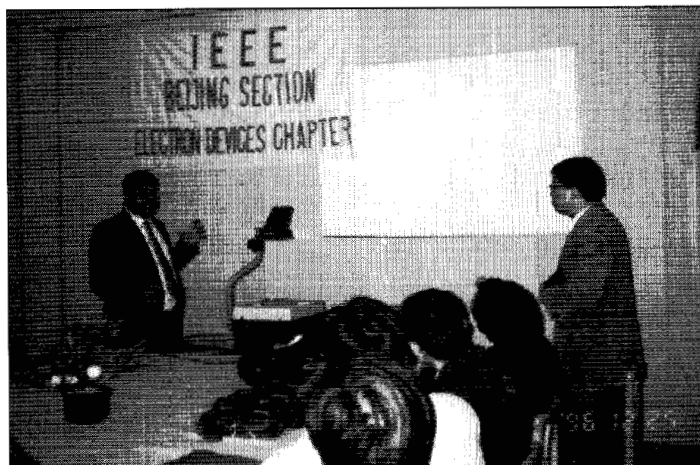
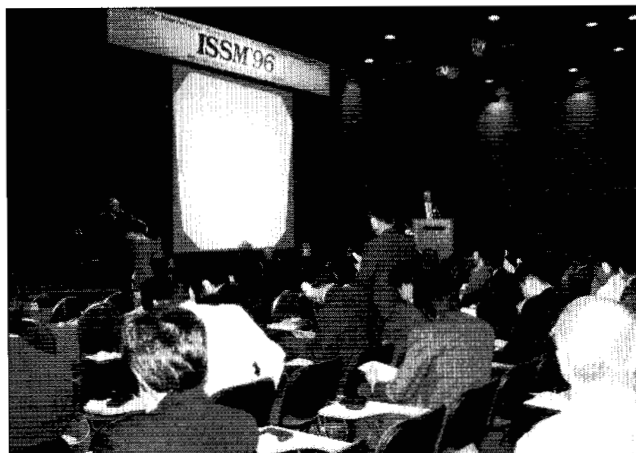
5, 1997, the week before the date of the Symposium on VLSI Technology in Kyoto, Japan. This conference is sponsored by the Industrial Technology Research Institute and National Science Council, in cooperation with the IEEE Electron Devices Society Taipei Chapter, IEEE Electron Devices Society, and the Chinese Institute of Engineers. The Symposium is held once every two years in Taipei. Visits to local industries and universities will be arranged after the conference. For further information, please contact: Professor T.P. Ma, Yale University, Department of Electrical Engineering, New Haven, CT 06520, TEL: (203) 432-4211, FAX: (203) 432-7769, E-mail: ma@surf.eng.yale.edu

Report of 1996 Semiconductor Manufacturing Technology Workshop

— by S.C. Sun

The 1996 Semiconductor Manufacturing Technology Workshop was held at Hsinchu, Taiwan, R.O.C. October 22 - 23, 1996. This is the 4th time that the work-

(continued on page 19)



EDS lecturer and newsletter Editor-in-Chief, Krishna Shenai, gives a talk for members of the ED Beijing Chapter.

EDS Meetings Calendar

(As of March 6, 1997)

USA, Canada & Latin America (Regions 1-6, 7 & 9)

April 7 - 10, 1997, * **IEEE INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM**, Location: Adams Mark Hotel, Denver, CO, Contact: Ajit K. Goel, Applied Materials, Inc. 3135 Kifer Rd., M/S 2712, Santa Clara, CA 95051, Tel: (408) 986-3682, Fax: (408) 986-2891, E-Mail: ajitg@aol.com, Deadline: Past Due

May 5 - 8, 1997, * **IEEE CUSTOM INTEGRATED CIRCUITS CONFERENCE**, Location: Westin Hotel / Santa Clara Convention Center, Santa Clara, CA, Contact: Melissa Widerkehr, Tel: (301) 527-0902, Fax: (301) 527-0994, E-Mail: cicc97@aol.com, Deadline: Past Due

May 11 - 15, 1997, @ **IEEE INTERNATIONAL CONFERENCE ON INDIUM PHOSPHIDE AND RELATED MATERIALS**, Location: Tara Resort, Hyannis (On Cape Cod), MA, Contact: Samantha Padilla, Tel: (908) 562-3894, Fax: (908) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: Past Due

May 12 - 14, 1997, ✓ **INTERNATIONAL SYMPOSIUM ON PLASMA PROCESS INDUCED DAMAGE**, Location: Monterey Conference Center, Monterey, CA, Contact: NCCAVS Business Office, Tel: (408) 737-0767, Fax: (408) 737-2403, E-Mail: nccavs@technicalmarketing.com, Deadline: Past Due

May 27 - 30, 1997, # **1997 INTERNATIONAL CONFERENCE ON ELECTRON, ION AND PHOTON BEAMS**, Location: Marriotts Laguna Cliffs Resort, Dana Point, CA, Contact: Anthony Novembre, Tel: (908) 582-2304, Fax: (908) 582-2300, E-Mail: aen@bell-labs.com, Deadline: Past Due

May 28 - 30, 1997, ✓ **INTERNATIONAL WORKSHOP ON COMPUTATIONAL ELECTRONICS**, Location: University of Notre Dame, Notre Dame, IN, Contact: Wolfgang Porod, Tel: (219) 631-6376, Fax: (219) 631-4393, E-Mail: wolfgang.porod@nd.edu, Deadline: Past Due

June 8 - 10, 1997, * **IEEE RADIO FREQUENCY INTEGRATED CIRCUITS SYMPOSIUM**, Location: Colorado Convention Center, Denver Colorado, Contact: Louis Liu, Tel: (310) 812-8372, Fax: (310) 813-9623, E-Mail: louis_liu@qmail4.sp.trw.co, Deadline: Past Due

June 15 - 19, 1997, @ **IEEE TRANSDUCERS - INTERNATIONAL SOLID-STATE SENSORS AND ACTUATORS CONFERENCE**, Location: Hyatt Regency Chicago, Chicago, IL, Contact: Kensall D. Wise, Tel: (313) 764-3346, Fax: (313) 747-1781, E-Mail: wise@engin.umich.edu, Deadline: Past Due

June 23 - 25, 1997, * **IEEE DEVICE RESEARCH CONFERENCE**, Location: Colorado State University, Fort Collins, CO, Contact: James C. Sturm, Tel: (609) 258-5610, Fax: (609) 258-3747, E-Mail: sturm@ee.princeton.edu, Deadline: Past Due

July 20 - 23, 1997, * **IEEE UNIVERSITY/ GOVERNMENT/INDUSTRY MICROELECTRONICS SYMPOSIUM**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Lynn F. Fuller, Tel: (716) 475-2035, Fax: (716) 475-5041, E-Mail: lfllf@ritvax.isc.rit.edu, Deadline: 4/15/97

July 27 - Aug. 2, 1997, @ **INTER SOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: Hilton Hawaiian Village Hotel, Honolulu, HI, Contact: Rosa Serrata, Tel: (212) 705-7450, Fax: (212) 705-3294, E-Mail: rosas@aiche.org, Deadline: Past Due

Aug. 4 - 6, 1997, * **IEEE CORNELL CONFERENCE ON ADVANCED CONCEPTS IN HIGH SPEED SEMICONDUCTOR DEVICES AND CIRCUITS**, Location: Cornell University, Ithaca, NY, Contact: R. Chris Clarke, Tel: (412) 256-1997, Fax: (412) 256-1877, E-Mail: cclarke@aescad.pgh.wec.com, Deadline: 4/8/97

Sept. 7 - 11, 1997, @ **IEEE INTERNATIONAL SYMPOSIUM ON COMPOUND SEMICONDUCTORS**, Location: Hotel Del Coronado, San Diego, CA, Contact: Samantha Padilla, Tel: (908) 562-3894, Fax: (908) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: 4/14/97

Sept. 8 - 10, 1997, @ **IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMICONDUCTOR PROCESSES AND DEVICES**, Location: Boston Marriott Cambridge, Cambridge, MA, Contact: Fely Barrera, Tel: (415) 723-1349, Fax: (415) 725-7731, E-Mail: fely@ee.stanford.edu, Deadline: Past Due

Sept. 10 - 12, 1997, * **IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE AND WORKSHOP**, Location: Hyatt Regency Cambridge, Cambridge, MA, Contact: Margaret M. Kindling, Tel: (202) 289-0440, Fax: (202) 289-0441, E-Mail: mkindling@semi.org, Deadline: Past Due

Sept. 15 - 17, 1997, ✓ **CONFERENCE ON ADVANCED RESEARCH IN VLSI**, Location: University of Michigan, Ann Arbor, MI, Contact: Richard B. Brown, Tel: (313) 763-4207, Fax: (313) 763-9342, E-Mail: brown@engin.umich.edu, Deadline: 4/4/97

Sept. 15 - 16 & 18 - 19, 1997, # **INTERNATIONAL WORKSHOPS ON DISPLAY MATERIALS AND DEVICES**, Location: Sheraton Centre Hotel, Toronto, Canada, Contact: Ralph Nadell, Tel: (212) 620-3341, Fax: (212) 620-3379, E-Mail: rnadell@newyork.palisades.org, Deadline: 4/1/97

Sept. 16 - 18, 1997 # **INTERNATIONAL DISPLAY RESEARCH CONFERENCE**, Location: Sheraton Center Toronto Hotel, Toronto, Canada, Contact: Ralph Nadell, Tel: (212) 620-3341, Fax: (212) 620-3379, E-Mail: rnadell@newyork.palisades.org, Deadline: 4/1/97

Sept. 23 - 25, 1997, ✓ **ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE SYMPOSIUM**, Location: Santa Clara Convention Center, Santa Clara, CA, Contact: ESD Assoc., Tel:

(315) 339-6937, Fax: (315) 339-6793, E-Mail: None, Deadline: Past Due

Sept. 28 - 30, 1997, * **IEEE BIPOLAR/BiCMOS CIRCUITS AND TECHNOLOGY MEETING**, Location: Minneapolis Marriott City Center, Minneapolis, MN, Contact: Janice V. Jopke, Tel: (612) 934-5082, Fax: (612) 934-6741, E-Mail: jjopke@aol.com, Deadline: Past Due

Sept. 29 - Oct. 3, 1997, * **IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE**, Location: Anaheim Marriott Hotel, Anaheim, CA, Contact: Paul A. Basore, Tel: 61-2-385-6151, Fax: 61-2-662-4240, E-Mail: p.basore@unsw.edu.au, Deadline: 5/5/97

Oct. 6 - 8, 1997, * **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, Location: Westing St. Francis Hotel, San Francisco, CA, Contact: Court Skinner, Tel: (408) 721-7420, Fax: (408) 721-6454, E-Mail: l.skinner@ieee.org, Deadline: 4/11/97

Oct. 6 - 9, 1997, * **IEEE INTERNATIONAL SOI CONFERENCE**, Location: Tenaya Lodge at Yosemite, Fish Camp, CA, Contact: Sandra Grawet, Tel: (310) 316-5153, Fax: (310) 316-0713, E-Mail: 70541.1225@compuserve.com, Deadline: 5/9/97

Oct. 11 - 16, 1997, * **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, Location: Anaheim Marriott Hotel, Anaheim, CA, Contact: Phillip Wallace, Tel: (908) 412-5987, Fax: (908) 412-5985, E-Mail: wallacepw@aol.com, Deadline: 5/9/97

Oct. 12, 1997, ✓ **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, Location: Anaheim Marriott Hotel, Anaheim, CA, Contact: Anthony Immorlica, Tel: (603) 885-1100, Fax: (603) 885-1074, E-Mail: None, Deadline: 8/1/97

Oct. 12 - 15, 1997, * **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, Lake Tahoe, CA, Contact: James W. Miller, Tel: (512) 933-7297, Fax: (512) 933-7662, E-Mail: rvkg60@email.sps.mot.com, Deadline: 7/7/97

Oct. 12 - 15, 1997, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER DESIGN: VLSI IN COMPUTERS AND PROCESSORS**, Location: Hyatt Regency Hotel, Austin, TX, Contact: IEEE Computer Society, Tel: (202) 371-1013, Fax: (202) 728-0884, E-Mail: swagner@computer.org, Deadline: Past Due

Oct. 20 - 24, 1997, ✓ **MANUFACTURING SCIENCE AND TECHNOLOGY GROUP PROGRAM**, Location: San Jose Convention Center, San Jose, CA, Contact: Frederick H. Dill, Tel: (914) 945-3332, Fax: (914) 945-4520, E-Mail: f.dill@ieee.org, Deadline: 9/20/97

Nov. 5, 1997, ✓ **IEEE ELECTRON DEVICES ACTIVITIES IN WESTERN NEW YORK CONFERENCE**, Location: Chester F. Carlson Auditorium, Rochester Institute of Technology, Rochester, NY, Contact: Karl Hirschman, Tel: (716) 475-

5130, Fax: (716) 475-5041, E-Mail: kdhe@crrit.edu, Deadline: 10/1/97

Nov. 9 - 12, 1997, * **IEEE INTELLIGENT TRANSPORTATION SYSTEMS CONFERENCE**, Location: Boston Park Plaza Hotel, Boston, MA, Contact: IEEE Boston Section, Tel: (617) 890-5290, Fax: (617) 890-5294, E-Mail: sec.boston@ieee.org, Deadline: Past Due

Dec. 4 - 6, 1997, * **IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE**, Location: Mills House Hotel, Charleston, SC, Contact: Len Trombetta, Tel: (713) 743-4424, Fax: (713) 743-4444, E-Mail: ltrombetta@uh.edu, Deadline: 8/8/97

Dec. 7 - 10, 1997, * **IEEE INTERNATIONAL ELECTRON DEVICES MEETING**, Location: Washington Hilton & Towers Hotel, Washington, DC, Contact: Phyllis Mahoney, Tel: (301) 527-0900, Fax: (301) 527-0994, E-Mail: pwma-honey@aol.com, Deadline: 7/30/97

Europe, Middle East & Africa (Region 8)

May 26 - 29, 1997, @ **IEEE INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS**, Location: Hilton Hotel, Weimar, Germany, Contact: ISPSD'97 Office, Tel: 49-69-63-08-202, Fax: 49-69-63-31-52-13, E-Mail: 100145.67@compuserve.com, Deadline: Past Due

June 5 - 7, 1997, ✓ **INTERNATIONAL CONFERENCE AND WORKSHOP ON ELECTROMAGNETICS OF COMPLEX MEDIA - BIANISOTROPICS**, Location: University of Glasgow, Glasgow, Scotland, Contact: Werner S. Weiglhofer, Tel: 44-141-330-4124, Fax: 44-141-330-4111, E-Mail: werner@maths.gla.ac.uk, Deadline: Past Due

June 5 - 7, 1997, * **IEEE INTERNATIONAL WORKSHOP ON CHARGE-COUPLED-DEVICES AND ADVANCED IMAGE SENSORS**, Location: Holiday Inn Crowne Plaza, Bruges, Belgium, Contact: Albert J.P. Theuwsen, Tel: 31-40-742734, Fax: 31-40-743390, E-Mail: theuwiss@prl.philips.nl, Deadline: Past Due

June 30 - July 4, 1997, ✓ **EUROPEAN PHOTOVOLTAIC SOLAR ENERGY CONFERENCE AND EXHIBITION**, Location: Palacio de Congresos, Barcelona, Spain, Contact: WIP, Tel: 49-89-7201232, Fax: 49-89-7201291, E-Mail: renewables@mail.tnet.de, Deadline: Past Due

Sept. 15 - 17, 1997, ✓ **INTERNATIONAL CONFERENCE ON MICROELECTRONICS**, Location: University of Nis, Nis, Serbia, Contact: Tatjana Trajkovic, Tel: 381-18-49-155, Fax: 381-18-46-180, E-Mail: miel@efn.ni.ac.yu, Deadline: Past Due

Sept. 19, 1997, ✓ **HIGH FREQUENCY POST-GRADUATE STUDENT COLLOQUIUM**, Location: Leeds University, Leeds, UK, Contact: Stavros

Iezekiel, Tel: 44-113-233-2000, Fax: 44-113-233-2032, E-Mail: s.iezekiel@elec-eng.leeds.ac.uk, Deadline: Not Available

Sept. 22 - 24, 1997, ✓ **EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE**, Location: Haus der Wirtschaft, Stuttgart, Germany, Contact: Herbert Gruenbacher, Tel: 43-1-58801-8150, Fax: 43-1-586-8697, E-Mail: hg@vlsivie.tuwien.ac.at, Deadline: Past Due

Sept. 23 - 25, 1997, ✓ **HIGH POWER MICROWAVE ELECTRONICS: MEASUREMENTS, IDENTIFICATIONS, APPLICATIONS CONFERENCE**, Location: Novosibirsk State Technical University, Novosibirsk, Russia, Contact: Vasily Snournitsin, Tel: 7-3832-460555, Fax: 7-3832-462598, E-Mail: crra@nstu.nsk.su, Deadline: 7/1/97

Oct. 7 - 10, 1997, ✓ **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS**, Location: Palatium of Arcachon, Arcachon, France, Contact: Nathalie Labat, Tel: 33-05-56-84-65-51, Fax: 33-05-56-37-15-45, E-Mail: labat@ixl.u-bordeaux.fr, Deadline: Past Due

Oct. 8 - 11, 1997, * **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, Location: Mountain Resort, Sinaia, Romania, Contact: Doina Vancu, Tel: 40-1-6332398, Fax: 40-1-3127519, E-Mail: cas@mail.sfos.ro, Deadline: 4/15/97

Nov. 24 - 25, 1997, ✓ **WORKSHOP ON HIGH PERFORMANCE ELECTRON DEVICES FOR MICROWAVE AND OPTOELECTRONIC APPLICATIONS**, Location: King's College, University of London, UK, Contact: Ali A. Rezazadeh, Tel: 44-171-873-2879, Fax: 44-171-836-4781, E-Mail: a.rezazadeh@bay.cc.kcl.ac.uk, Deadline: 9/1/97

Asia & Pacific (Region 10)

June 3 - 5, 1997, ✓ **INTERNATIONAL SYMPOSIUM ON VLSI TECHNOLOGY, SYSTEMS AND APPLICATIONS**, Location: Grand Hyatt Hotel, Taipei, Taiwan, R.O.C., Contact: T.P. Ma, Tel: (203) 432-4211, Fax: (203) 432-7769, E-Mail: ma@surf.eng.yale.edu, Deadline: Past Due

June 8, 1997, @ **IEEE INTERNATIONAL WORKSHOP ON STATISTICAL METROLOGY**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Hiroo Masuda, Tel: 81-428-32-1111, Fax: 81-428-33-2161, E-Mail: masuda@ddc.hitachi.co.jp, Deadline: Past Due

June 8 - 9, 1997, @ **IEEE SILICON NANOELECTRONICS WORKSHOP**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Toshiro Hiramoto, Tel: 81-3-3402-6231, Fax: 81-3-3402-0873, E-Mail: hiramoto@nano.iis.u-tokyo.ac.jp, Deadline: Past Due

June 10 - 12, 1997, @ **IEEE SYMPOSIUM ON VLSI TECHNOLOGY**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: William M. Siu, Tel:

(602) 554-5421, Fax: (602) 554-7019, E-Mail: bill_m_siu@ccm.hf.intel.com, Deadline: Past Due

June 12 - 14, 1997, # **IEEE SYMPOSIUM ON VLSI CIRCUITS**, Location: Kyoto Grand Hotel, Kyoto, Japan, Contact: Ian Young, Tel: (503) 613-3923, Fax: (503) 613-8039, E-Mail: iyoung@ptd-cs2.intel.com, Deadline: Past Due

July 7 - 10, 1997, # **INTERNATIONAL MICRO-PROCESS AND NANOTECHNOLOGY CONFERENCE**, Location: Nagoya Congress Center, Nagoya, Japan, Contact: Secretariat-MicroProcess '97, Tel: 81-3-5814-5800, Fax: 81-3-5814-5823, E-Mail: conf@bcasj.or.jp, Deadline: Not Available

July 21 - 25, 1997, ✓ **IEEE INTERNATIONAL SYMPOSIUM ON PHYSICAL AND FAILURE ANALYSIS OF INTEGRATED CIRCUITS**, Location: Raffles City Convention Centre, Singapore, Contact: Philip Ho, Tel: 65-840-2480, Fax: 65-840-2568, E-Mail: pho@micro.lucent.com, Deadline: Past Due

Aug. 17 - 21, 1997, @ **IEEE INTERNATIONAL VACUUM MICROELECTRONICS CONFERENCE**, Location: Hotel Hyundai, Kyongju, Korea, Contact: Jae Soo Yoo, Tel: 82-2-820-5274, Fax: 82-2-822-0635, E-Mail: ivmc97@cau.ac.kr, Deadline: Past Due

Aug. 30, 1997, ✓ **HONG KONG ELECTRON DEVICES MEETING**, Location: City University of Hong Kong, Hong Kong, Contact: Hei Wong, Tel: 852-2788-7722, Fax: 852-2788-7791, E-Mail: eehwong@cityu.edu.hk, Deadline: 4/1/97

Sept. 16 - 19, 1997, ✓ **INTERNATIONAL CONFERENCE ON SOLID-STATE DEVICES AND MATERIALS**, Location: Act City Hamamatsu, Hamamatsu, Japan, Contact: Secretariat of SSDM '97, Tel: 81-3-5814-5800, Fax: 81-3-5814-5823, E-Mail: confg3@bcasj.or.jp, Deadline: 5/23/97

Oct., 1997, ✓ **SEMICONDUCTOR MANUFACTURING TECHNOLOGY WORKSHOP**, Location: Hsinchu, Taiwan, Contact: S.C. Sun, Tel: 886-35-781688, Ext. 4700, Fax: 886-35-773671, E-Mail: s.sun@ieee.org, Deadline: Not Available

Oct. 8 - 10, 1997, ✓ **INTERNATIONAL CONFERENCE ON MICROELECTRONICS**, Location: Trade Mark Building, Jakarta, Indonesia, Contact: Onno W. Purbo, Tel: 62-22-2506280, Fax: 62-22-2508763, E-Mail: onno@kalpataru.netura.net.id, Deadline: 5/1/97

Oct. 13 - 15, 1997, ✓ **INTERNATIONAL CONFERENCE ON VLSI AND CAD**, Location: Seoul TEMF Hotel, Seoul, Korea, Contact: Sung Tae Ahn, Tel: 82-2-780-6001, Fax: 82-2-760-6060, E-Mail: intercom@soback.kornet.nm.kr, Deadline: 4/1/97

Oct. 27 - 31, 1997, ✓ **INTERNATIONAL CONFERENCE ON NITRIDE SEMICONDUCTORS**, Location: Kyodo-bunka-kaikan, Tokushima, Japan, Contact: Hadis Morkoc, Tel: (513) 255-2923, Fax: (513) 476-4095, E-Mail: morkoc@uiuc.edu, Deadline: Not Available

* = Sponsorship or Co-Sponsorship Support
✓ = Technical Co-Sponsorship Support

@ = Alternates support between 'Sponsorship/Co-Sponsorship' and 'Technical Co-Sponsorship'
= Cooperation Support

Report of 1996 Semiconductor Manufacturing Technology Workshop *(continued from page 16)*

shop has been held since its inception four years ago. This year's workshop is co-sponsored by the IEEE Electron Devices Society Taipei Chapter and The Electronics Research and Service Organization of Industrial Technology Research Institute. Three-hundred participants from different disciplines, but working in the same area of semiconductor manufacturing attended the workshop to exchange experiences and ideas on advancing manufacturing technology. Four invited papers were given, including Way Tu, President of LAM Research on partnership between IC fabs and equipment suppliers, and Atsuyoshi

Koike of Hitachi on moving toward future fab. Sixteen papers from local industry were presented on various perspectives of C.I.M. system, Integrated systems defect/process/yield data management, process control, yield enhancement and facility management. A special panel discussion on "infrastructure of Science Park" was held as the final part of this workshop.

This workshop will be held again in Hsinchu, Taiwan from October 21 to 22, 1997. For further information, please contact: J.B. Chen, Taiwan Semiconductor Mfg. Co. Ltd., No. 121, Park Ave. 3, Science-Based Ind. Park, Hsinchu, Taiwan, ROC, TEL: 886-35-



780221, FAX: 886-35-781546, E-mail: jbchen@tsmc.com.tw.

— S. C. Sun, Editor

AdCom Meeting Summary *(continued from page 11)*

- This June, there will be a meeting for our Region 10 chapters in Kyoto, Japan in conjunction with the VLSI Symposia.

- An exciting new "Angel Program" was also described by Cary. Each voting member of the AdCom would become an "Angel" for three chapters. The Angel will be asked to attend one or two chapter meetings, correspond with chapter chairs by e-mail, meet with the chairs when possible to provide insight and counsel, and give talks to chapters on technical matters and on the IEEE in general and the EDS in particular. It was moved and unanimously passed to establish this Angel Program, subject to future monitoring of expenses involved.

In his **EDUCATIONAL ACTIVITIES COMMITTEE** report, Jerry Woodall provided some interesting results for the Distinguished Lecturer Program:

- In 1994, there were 6 lectures at a total cost of more than \$5,000.
- In 1995, there were 34 lectures at a total cost of less than \$2,000. Thus far in 1996, there have been 43 lectures costing approximately \$7,500.

All of this has been accomplished by "volunteering" AdCom members as lecturers, and encouraging them to combine chapter visits with technical travel. Jerry also mentioned two initiatives:

- Plans are underway to promote "mini colloquia" for the chapters.
- The Sloan Foundation has a project to help high school and beginning college students to choose careers in technical fields. They are developing a CD ROM featuring "working engineers" who talk about their careers.

In the **PUBLICATIONS CHAIR'S REPORT**, Steve Hillenius first discussed the

turnaround time for our publications. The Transactions on Electron Devices (T-ED) takes an average of 52 weeks from the date a manuscript is first received until it appears in print. It ranks 4th out of 49 transactions and journals published by IEEE for fastest turnaround time. Electron Device Letters (EDL) ranks second out of seven letter journals. Thus, our record is very good, but considerable thought is being given to improving the turnaround time without sacrificing quality. To accomplish this, several ideas were discussed. It was announced that, effective in December 1996, T-ED and EDL will be available on the World-Wide Web to the subscribers. Finally, it was moved and unanimously voted to discontinue Circuits & Devices Magazine (C&D) after calendar year 1997. C&D was originally used as a vehicle for society news, but we now have the newsletter to accomplish that purpose.

Bruce Griffing announced that Rick Sivan will serve as the new MEETINGS CHAIR effective 1/97. Presenting meeting statistics, he indicated that significantly more meetings obtain technical co-sponsorship support as opposed to cooperation support. We now sponsor 104 meetings in total, and the number of chapter sponsored meetings is growing. A motion to approve the meetings for the first half of 1998 passed unanimously.

The following AWARDS were announced by Tak Ning:

- Distinguished Service Award — Al Mac Rae
- J.J. Ebers Award — Tetsushi Sakai

The STAR program progress was described by Julia Brown. This is a student-teacher mentoring program initiated in 1995 by April Brown and Julia Brown, targeting young girls. There are currently two

very active groups, separated by thousands of miles: one in Yugoslavia and the other in Thousand Oaks. There was considerable discussion as to how the program could be expanded to increase its exposure. Interest has been shown both inside and outside the IEEE. The biggest problem is the identification of suitable teachers and mentors.

The Professional Activities Council for Engineers (PACE) Program was described by Al Mac Rae. PACE tends to the technical and profession needs of members, and it reports directly to the United States Activities Board (USAB). However, it is difficult to know how EDS should be involved in this activity. Al welcomes suggestions, and will chair a committee to investigate more beneficial involvement for EDS. Al also mentioned the work of the IEEE Technical Activities Board New Technical Directions Committee, which has assembled an annual portfolio of advances in technical and emerging areas. This material has been installed on the WWW, and has received 20,000 "hits".

Steve Hillenius gave an "in progress update" on IEDM, which started the evening of the AdCom meeting. He noted that the number of attendees continues to increase. It was also commented that the number of abstracts submitted from the USA has been decreasing since 1993, while the number from Japan is relatively flat, and there has been an increase from "the rest of the world," notably Taiwan and Hong Kong.

Lunch was followed by specific reports reviewing the progress made by individual chapters, publications and meetings.

James C. Merz
University of Notre Dame
South Bend, IN



NEWSLETTER EDITORIAL STAFF

EDITOR-IN-CHIEF



Krishna Shenai
EECS Department (M/C 154), 1135 SEO
The Univ. of Illinois at Chicago
851 South Morgan Street
Chicago, IL 60607-7053

Tel: (312) 996-2633
Fax: (312) 996-0763
E-Mail: k.shenai@ieee.org

EDITORS

REGIONS 1-6, 7 & 9

Eastern and Northeastern USA (Regions 1 & 2)

M. Ayman Shibib
Lucent Technologies Inc.
Bell Laboratories
2525 N. 12th Street
P.O. Box 13396
Reading, PA 19612
Tel: (610) 939-6576
Fax: (610) 939-6795
E-Mail: a.shibib@ieee.org

Southeastern and Southwestern USA & Latin America (Regions 3, 5 & 9)

Elias D. Towse
Thornton Hall E214
University of Virginia
Charlottesville, VA 22903-2442
Tel: (804) 924-6078
Fax: (804) 924-8818
E-Mail: e.towse@ieee.org

Central USA & Canada (Regions 4 & 7)

Savvas G. Chamberlain
Electrical & Comp. Eng. Dept.
University of Waterloo
Waterloo, Ontario
N2L 3G1, Canada
Tel: (519) 888-4598
Fax: (519) 746-6321
E-Mail: sg.chamberlain@ieee.org

Western USA (Region 6)

Paul K.L. Yu
Univ. of California at San Diego
Dept. of Elec. and Computer Engrg.
Eng. Bldg. Unit 1, Room 3604
La Jolla, CA 92093-0407
Tel: (619) 534-6180
Fax: (619) 534-0556
E-Mail: p.yu@ieee.org

REGION 8

Eastern Europe & The Former Soviet Union

Adrian Veron
Baneasa S.A.
Erou Iancu Nicolae 32
Bucharest 72996 Romania
Tel: 401-633-4050, Ext. 203
Fax: 401-633-4225
E-Mail: a.veron@ieee.org

Scandinavia & Central Europe

Mikael L. Ostling
Department of Electronics
Electrum 229
Royal Institute of Technology
S-164 40 Kista
Sweden
Tel: 46-8-7521402
Fax: 46-8-7527782
E-Mail: m.ostling@ieee.org

UK, Middle East & Africa

Terry H. Oxley
Tremont
Back Lane Halam Newark
Notts NG22 8AG
England
Tel: 44-1636-815510
Fax: 44-1636-815865
E-Mail: t.oxley@ieee.org

Western Europe

Robert G. Adde
Institut d'Electronique Fondamentale
URA22 CNRS, Bat 220
Universite Paris-Sud
91405, Orsay
France
Tel: 33-1-69-41-78-50
Fax: 33-1-60-19-25-93
E-Mail: r.adde@ieee.org

REGION 10

Australia, New Zealand & South Asia

Chennupati Jagadish
Dept. of Electronic Materials Engrg.
Research School of Phys. Sciences & Engrg.
Australian National University
Canberra, ACT 0200
Australia
Tel: 61-6-249-0363
Fax: 61-6-249-0511
E-Mail: c.jagadish@ieee.org

Northeast Asia

Hiroshi Iwai
ULSI Device Engineering Lab
Microelectronics Engineering Lab
Toshiba Corporation
1, Komukai-Toshiba-cho, Saiwai-Ku
Kawasaki, 210, Japan
Tel: 81-44-549-2335
Fax: 81-44-549-2291
E-Mail: h.iwai@ieee.org

East Asia

S.C. Sun
Taiwan Semiconductor Manufacturing
Company Ltd.
No. 9, Creation Rd. I
Science-Based Industrial Park
Hsinchu, Taiwan, R.O.C.
Tel: 886-35-781688 ext. 4700
Fax: 886-35-773671
E-Mail: s.sun@ieee.org