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Editor-in-Chief: Krishna Shenai

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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

1999 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM)



Photo Courtesy of Minneapolis Convention Association

The 1999 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) will be held in Minneapolis, Minnesota September 26 - 28, 1999. BCTM provides a forum for the technical communication focused on the needs and interests of bipolar and BiCMOS engineers. The conference covers the design, performance, fabrication, testing and application of bipolar, BiCMOS and BiFET integrated circuits. This year's conference includes a short course, two evening panel sessions, several invited papers, a vendor exhibition, and a best student paper award.

The 1999 BCTM keynote speech will be given by Dennis Buss from Texas Instruments on the topic "Persistence of Bipolar into the Future". The two evening panel sessions are titled "Pros and Cons of the Technical Ladder in Large Companies", and "Process vs. Circuit Design, The Trade-Offs". Several exhibits by design, test/measurement, and CAD/modeling vendors will also be on display at the conference.

The conference technical sessions include presentations given in the following areas: Analog/Digital Circuit Design, Radio Frequency Circuit Design, Device Physics, Modeling and Simulation, Process Technology, and Power Devices.

The Analog/Digital Design Session covers: Analog ICs; Digital ICs; Mixed Analog/Digital ICs; Novel Design Concepts and Methods; DACs and ADCs; Amplifiers; Integrated Filters; Communication ICs; Sensors; Gate Arrays; Cell Libraries; Analog Master Chips; Analog ICs describing novel subsystems within a VLSI Chip; and Packaging of High-Performance ICs.

The Radio Frequency Design Session will contain papers on: Low-Noise Amplifiers; Automatic Gain Control; Low-Phase Noise VCOs; Active Mixers;

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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.

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Report from the Device Reliability Physics Committee

Lucian A. Kasprzak



The Device Reliability Physics Committee (DRPC) of EDS was formed late in 1997. It was created as a needed focus for the very broad and diverse community involved in Device Reliability Physics. This community forms a thread in the fabric of the Semiconductor Industry, which has developed in the last half century. Although not always an obvious thread, the strength of the fabric is critically dependent upon device reliability physics. The need for an understanding of device reliability physics was first recognized by the military with the formation of the International Reliability Physics Symposium (IRPS). IRPS was started in 1963 and originally sponsored by Rome Air Development Center, at Griffiss Air Force Base in Rome, NY. In the late 1960's IRPS sought the sponsorship of the IEEE and became jointly sponsored by the Reliability Society and the Electron Devices Society. IRPS provided a forum for discussion of the physics of failure, a term that became a watch word for the next 35 years in the developing semiconductor industry. The physics of failure shed light on the root cause of failure, which had to be eliminated. Sometimes the root cause was related to yield, and elimination of the root cause increased yield as well as reliability. But as often as not the physics of failure revealed a new phenomenon that manifests itself as a weakness in design, process, material or application. The determination and elimination of the root cause of failure invariably involved a multi-disciplined effort. Electrical Engineering, Physics, Materials, Chemistry, Processing, Packaging, etc. were usually mixed in just the right proportions to generate a cost effective solution. The story of the improvements in customer expectation, as IC circuit count and complexity increased, was at least in part made possible by the never ending search for the root cause of failure.

The Device Reliability Physics Committee's role is to act as a focal point for the device reliability physics community at large. This is indeed a tall order when one considers how many disciplines are involved. The committee members are Ann Campbell, Sandia National Labs; Aris Christou, University of Maryland; Ajit Goel, GHz Corporation; Chen-Ming Hu, University of California at Berkeley; Joe McPherson, Texas Instruments; Robert Thomas, Technology Experts Network; O.D. Bud Trapp, Technology Associates; and Lu Kasprzak, Direct Radiography Corp.

(continued on page 16)

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

1999

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

2000

I. Adesida (1)
H. S. Bennett (2)
H. Iwai (2)
A. A. Santos (1)
S. C. Sun (1)
K. Tada (2)
P. K. L. Yu (1)

*2001

A. S. Brown (2)
T. P. Chow (2)
K. F. Galloway(1)
S. J. Hillenius (1)
C. Jagadish (1)
M. A. Shibib (2)
R. Singh (1)

Number in parenthesis represents term.

* Members elected 12/98

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Upcoming Technical Meetings

BCTM (continued from page 1)

Active Gytrators; Noise Suppression Techniques; Frequency Synthesizers; Radio Subsystems; Packaging of RF Components; and Designing with Passive Components at RF Frequencies.

The Device Physics Session covers the following areas: New Device Physics Phenomena in Si, SiGe, and III-V Devices; Profile Design Issues and Scaling Limits; Hot Electron Effects and Reliability Physics; Non-Equilibrium Transport and High Field Phenomena; Low-Frequency Noise; and Novel Measurements Techniques.

The Modeling and Simulations Session covers: Improved BJT Models; Device, Process and Circuit Simulation Software; Behavioral Modeling Techniques and Tools; RF Simulation Techniques and Tools; Power and Thermal Simulation; Interconnect and Package Simulation; Modeling of Passive Components; Process Monitoring and Control; Statistical Modeling; and Parameter Extraction.

The Process Technology Session covers: Advances in Processes and Device Structures Demonstrating Capabilities of High-

Speed, Low-Power, Low-Noise, High-Current, High-Voltage, etc.; BiCMOS Processes; Advanced Process Techniques; Si, III-V and SiGe Heterojunction Bipolar/ BiCMOS Devices; and Fabrication of High-Performance Passive Components.

The Power Devices Session focuses on Discrete and Integrated Bipolar/BiCMOS Power Devices and High-Voltage ICs. Areas included are: Automotive Electronics; Disc Drives; Display Drives; Power Supplies; Electric Utility; Medical Electronics; Motor Controls; Regulators; Amplifiers; Converters; Aerospace Electronic Applications; BiCMOS Circuits for Controlling Power Devices; CAD and Modeling of Power Devices; and Packaging of Power Devices.

The Bipolar/BiCMOS Circuits and Technology Meeting is held at the Marriott City Center Hotel in downtown Minneapolis. The Marriott offers the finest hotel accommodations in the Twin Cities area. Explore the ultramodern City Center shopping complex adjoining the hotel. Stroll by skywalk to an array of boutiques, cinemas, nightspots, and the tree-lined sidewalks of the famous Nicollet Mall. Minneapolis features world-famous cultural attractions such

as the Guthrie Theater, Minneapolis Orchestra Hall, historic Orpheum and State Theaters. In nearby Bloomington is the largest fully enclosed retail and family entertainment complex in the United States, The Mall of America. Here you can shop at over 400 stores, ride a roller coaster, shoot a round of miniature golf, or dine in sunlight or candlelight. There are two wonderful zoos and many other tourist sites in the Twin cities.

BCTM is sponsored by the IEEE Electron Devices Society, in cooperation with IEEE Solid-State Circuits Society and the IEEE Twin Cities Section. The 1999 Conference Chair is John Shott, Stanford University, Stanford, CA. The Technical Program Chair is Joachim Burghartz, DIMES, Delft University of Technology, The Netherlands. Interested parties can contact the BCTM Conference Manager: Janice Jopke, CCS Associates, 6611 Countryside Drive, Eden Prairie, MN 55346, TEL: (612) 934-5082; FAX: (612) 934-6741; E-Mail: jjopke@aol.com.

Tom Skaar
VTC Inc.
Bloomington, MN

1999 International SOI Conference

The 25th Annual International SOI Conference and Tutorial Short Course, sponsored by the IEEE Electron Devices Society, will be held at the Doubletree Hotel Sonoma County in Rohnert Park, CA from October 4th to 7th, 1999. This Conference provides a forum for open discussion in all areas of silicon-on-insulator technologies and their applications. The last few years have seen increased interest in SOI technology. The SOI Conference, which began as the SOS Technology Workshop, has evolved into the premier conference for presenting original work that addresses the latest developments of all aspects of SOI technology. It is geared to provide both cross-disciplinary interaction for the experts and a broad introduction for those new to the



Photo Courtesy of Sonoma County Convention and Visitors Bureau

field. The technical portion of the conference will be organized by Jason Woo of UCLA and will focus on four major areas:

- Materials Development: Formation, modification, characterization, manufacture, alternative material efforts, etc.

- Devices: Double gate / delta structure, physics and modeling, new or novel devices, etc.
- Circuit Development and Applications: Low-power, high-voltage, high-temperature, microwave analog/linear, displays, microactuators, microsensors, etc.
- Reliability: Hot carrier effects, high temperature operation, radiation effects, manufacturability and process integration of devices and circuits, etc.

A plenary session will feature invited papers by recognized leaders in SOI technology. In addition to several oral sessions, a poster session will also be included to provide an expanded range of coverage of special topics of interest and

(continued on page 4)

SOI (continued from page 3)

to give authors an opportunity for in-depth discussions with colleagues. Two page summaries of all papers accepted for presentation at the conference will be published in the conference proceedings. At the conclusion of the conference, a Best Paper Award will be presented.

Although the regular submission deadline has already passed, late breaking, high quality, previously unpublished papers are solicited as late news items. The late news deadline is August 15, 1999. Submissions should be sent c/o BACM, 520 Washington Blvd., Suite 350, Marina Del Rey, CA 90292, TEL: (310) 305-7885; FAX: (310) 305-1038; E-Mail: bacm@mediaone.net.

The conference will be immediately preceded by a one-day Tutorial Short Course on October 4th, organized by Mike Liu of the Honeywell Solid State Electronics Center. The short course is designed for those considering the suitability of SOI for their particular application and will focus on RF, analog, and digital applications, as well as materials issues. These tutorials, presented by experts, will review basic topics as well as the latest developments and thus will be beneficial to newcomers as well as experienced members of the SOI community. Participants will receive a bound copy of all visual presentations.

The Wednesday evening Rump Session, organized by Brian Doyle of Intel

Corporation, is designed to encourage attendees to share their opinions and technical expertise in frank and open discussions of a chosen aspect of SOI technology and offers an opportunity to meet colleagues in a relaxed atmosphere.

A materials and equipment exhibition relating to SOI technology will also be held concurrently with the Conference. This exhibit is very useful both to those exploring the possibility of SOI technology for their company, as well as to those anticipating or already in production. For more details, please contact Harold Hovel, IBM Corporation, TEL: (914) 945-2226; E-Mail: hovel@watson.ibm.com.

In addition to the excellent technical program, attendees will also have numerous opportunities to interact with colleagues in a less formal atmosphere at the conference reception, banquet, and cookout. Plan to meet new friends and renew old friendships while enjoying excellent food and some of Sonoma Valley's world famous wines. A vintage experience awaits you. Beautiful Sonoma County offers a wide range of experiences from golf and spas to hot air ballooning, and, of course, wine-tasting. Less than an hour north of the San Francisco Bay Area and ten minutes south of Santa Rosa, the Doubletree Hotel provides ideal access to some of the best sight-seeing in northern California, including the Jack London State Historic Park, ocean beaches, giant redwoods, and over 130 wineries. Conveniently

located next door to the hotel is the California Welcome Center (site of the conference opening reception) with its wine-tasting programs, educational materials, and cooking classes. Wineries can be toured by car, jeep, limo, or by horse-drawn carriage. For tastes that range beyond wine, the area is considered Sonoma's "retail hub" with a wide variety of shops where one can enjoy browsing for unique gifts, artwork, and antiques.

In order to promote networking within the SOI community and provide time to take advantage of these excellent recreational opportunities, attendees will have Wednesday afternoon free of conference sessions. Companion programs will also be available. Spouses and families are welcome. For further information about the 1999 SOI Conference, please contact Ted Houston, SOI Conference General Chair, Texas Instruments, TEL: (972)995-9131; E-Mail: ted-houston@ti.com, or BACM, 520 Washington Blvd., Suite 350, Marina Del Rey, CA 90292, TEL: (310) 305-7885; FAX: (310) 305-1038; E-Mail: bacm@mediaone.net.

Information is also available from the SOI Web Page at <http://www.drcsdca.com/~soiconf/>. On behalf of the 1999 International SOI Conference Committee, we look forward to meeting you in Sonoma Valley!

*Dr. John F. Conley, Jr.
Dynamics Research Corporation
San Diego, CA*

1999 International Symposium on Semiconductor Manufacturing (ISSM)

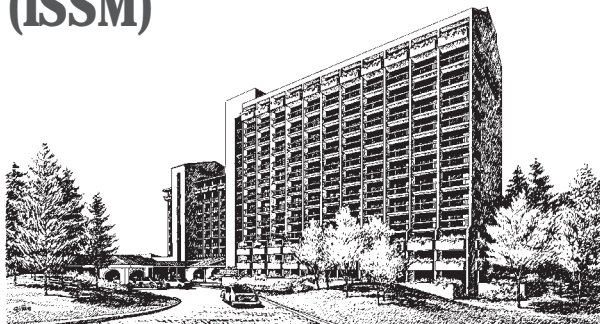
The 1999 International Symposium on Semiconductor Manufacturing (ISSM) will be held October 10-13 1999 at the Santa Clara Marriott in Santa Clara, California. The Symposium is a forum of semiconductor manufacturing professionals dedicated to sharing technical solutions and opinions on the advancement of manufacturing science. ISSM's focus is on the systems, methods and science used to manufacture integrated circuits.

ISSM is an international symposium drawing attendance from over 14 countries worldwide with strong contingencies from

the United States, Japan and Western Europe.

Presentations at ISSM '99 will address key areas of interest including Factory Design, Manufacturing Control and Execution, Manufacturing Strategy and Structure, Process and Metrology Equipment, Defect Reduction and Yield Enhancement, Ultraclean Technology, Environment, Safety and Health, and Process and Material Optimization.

Papers will be submitted by manufactur-



ing professionals, engineers and managers from semiconductor, equipment and materials. University and industry researchers will also be presenting.

Invited speakers will include Dan May-

dan from AMAT, Sue Billat from Robertson-Stephens Securities, and Laurent Bosson from SGS-Thompson.

Oral presentations will take place in two tracks over three days. The poster session provides an opportunity for enhanced discussion between the presenter and the audience. A very thorough and comprehensive peer review process is employed by the worldwide program committee to ensure that paper quality is excellent.

Supplementing the technical sessions will be a panel discussion on the topic of Copper Processing, which will provide a highly interactive format for considering this current industry trend.

A half day tutorial workshop on 300mm Manufacturing will be held on Sunday. This workshop will address issues associated with the worldwide conversion to 300mm wafer processing.

ISSM is sponsored by the IEEE (Electron Devices Society and Components, Packaging and Manufacturing Technology Society), the Ultra Clean Society, and Semiconductor Equipment & Materials International (SEMI).

The Santa Clara Marriott is located in the heart of Silicon Valley adjacent to Paramount's Great America theme park. The Bay Area location offers a wide variety of interests to those visiting from out of

state or out of the country. Extended time can be spent in San Francisco, the Napa Valley Wine Country, Lake Tahoe, Yosemite National Park, or the charming towns of Carmel and Monterey.

For registration or general information about ISSM, please visit our web site at <http://www.issm.com> or contact Lindy Miller at ISSM, c/o Meetings Plus, 242 Lafayette Circle, Lafayette, CA 94549, TEL: (925) 284-4040; FAX: (925) 284-4161; E-Mail: issm@meetingsplus.com.

*Bruce Sohn
Intel Corporation
Fort Worth, TX*

IEDM Videos

The 1998 IEEE International Electron Devices Meeting was recently held this past December in San Francisco, CA. Two short courses were offered at the meeting: Reliability for Logic & Memory Technologies and Next-Generation TCAD: Models & Methods. The courses are now available on videotape through the IEEE Customer Service department.

Reliability for Logic & Memory Technologies

Presented by Anthony S. Oates, Bell Laboratories, Lucent Technologies; Joseph W. McPherson, Texas Instruments, Inc.; Peng Fang and Hao Fang, AMD; Charvaka Duvvury, Texas Instruments, Inc.; Tim Sullivan, IBM, Corp.; and Kin P. (Charles) Cheung, Bell Laboratories, Lucent Technologies.

Technology scaling pushes existing ULSI materials and devices towards their intrinsic reliability limits. Maintaining a high level of reliability without limiting continued scaling and circuit integration is a key challenge. The convergence of several factors is making "the reliability challenge" a more critical issue. Existing testing methodologies are no longer capable of resolving the reliability levels required by customers, necessitating new approaches to reliability assurance. Increasing performance requirements for new generations of technology are either pushing existing materials to their limits, or are mandating the use of novel materials, whose reliability limitations are not well understood. The key to continued reliability improvement is a fun-

damental understanding of the mechanisms of failure, and the manufacturing and design factors that affect them. This video presents detailed discussions of the major reliability issues that face IC technology development and manufacturing as we move into the Giga-Scale Integration era. Continued success requires that these issues be understood and considered by everyone, including process, device and circuit engineers.

Reliability for Logic & Memory Technologies

Recorded December 1998 / Approx. 5 Hrs. / 4 Video Tapes

List Price \$425.00, IEEE Member Price \$275.00

NTSC Order No. EV5528, NTSC ISBN 0-7803-5303-X

PAL Order No. EV5529, PAL ISBN 0-7803-5304-8

Next-Generation TCAD: Models & Methods

Presented by Enrico Sangiorgi, DIEGM, University of Udine, Italy; Conor Rafferty, Bell Laboratories, Lucent Technologies; Francisco Leon, Intel Corp.; Mark Lundstrom, Purdue University; Jeffrey Johnson and Philip Wond, IBM T.J. Watson Research Center; Jacob White, Massachusetts Institute of Technology.

Device densities have grown exponentially in the last thirty years. For this trend to continue, a number of hurdles must be surmounted. Fundamental physical limits are being approached at the same time

that economic and design constraints are becoming serious issues. As a consequence, Technology Computer Aided Design TCAD of the near future will be challenged by a number of fundamental problems such as microscopic diffusion mechanisms, quantum mechanical transport, molecular dynamics, quantum chemistry and high frequency interconnect simulation. Next-generation TCAD can and will play a key role in quantifying potential roadblocks, indicating new solutions, and keeping technology development on the path of Moore's law. This course offers insight into the physical basis of TCAD to allow users to leverage these tools effectively. Five distinguished experts in modeling and simulation provide a detailed survey of the challenging issues for TCAD of the next decade, with an emphasis on the fundamentals of the models themselves.

Next-Generation TCAD:

Models & Methods

Recorded December 1998 / Approx. 5 Hrs. / 4 Video Tapes

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Society News

Announcement of Newly Elected AdCom Members

On 6 December 1998, the EDS AdCom held its annual election of officers and members-at-large. The following are the results of the election and brief biographies of the members-at-large.

I. OFFICERS

The following individuals were re-elected for a one-year term beginning 1/1/99:

President: Bruce F. Griffing, General Electric Company

Vice President: Cary Y. Yang, Santa Clara University

Treasurer: Lucian A. Kasprzak, Direct Radiography Corporation

Secretary: John K. Lowell, Oracle Corporation

II. ADCOM MEMBERS-AT-LARGE

A total of seven persons were elected to three-year terms (1999-2001) as Members-At-Large of the EDS AdCom. Three of the seven individuals were re-elected for a second term, while the other four were first-time electees. The backgrounds of the electees span a wide range of professional and technical interests.

SECOND TERM ELECTEES:



APRIL S. BROWN is a Professor in the School of Electrical and Computer Engineering and an Associate Dean in the College of Engineering at the Georgia Institute of Technology in Atlanta, Georgia. She has worked at the Hughes Research Laboratories, the University of Michigan and the Army Research Office. She is a 1998 Fellow of the IEEE and has published or presented over 140 papers. Her area of research is compound semiconductor materials and devices. She is also an Editor in the area of compound semiconductors for the *Transactions on Electron Devices*. In addition, she is a member of the IEEE Women in Engineering Committee.



T. PAUL CHOW received his B.A. degree in Mathematics and Physics (summa cum laude) from Augustana College, Sioux Falls, SD. In 1975, he received his MS degree in Materials Science from Columbia University and Ph.D. in Electrical Engineering from Rensselaer Polytechnic Institute (RPI), Troy, NY in 1982. He worked at General Electric Corporate Research and Development Center from 1982 to 1989. Since 1989, he has been on the faculty of the Electrical, Systems and Computer Engineering Department of RPI where he is now a Professor. His present research interests are in high-voltage power devices, VLSI metallization, and wide bandgap compound semiconductors. Dr. Chow has published over 60 papers in refereed scientific journals, presented over 100 conference talks, and holds over ten patents. He is a Senior Member of the IEEE and a member of the Electrochemical Society.



M. AYMAN SHIBIB received a Ph.D. in Electrical Engineering in 1979 from the University of Florida and was an Adjunct Assistant Professor there from 1979 to 1980. In 1980, he joined Bell Laboratories as a Member of Technical Staff. He was instrumental in the development and introduction to manufacture the first 600 volt integrated circuit used in #5ESS(tm) electronic switching system. He also worked on the development of smart power ICs used in telecommunications and other applications. He is currently a Distinguished Member of Technical Staff at Bell Labs, Lucent Technologies in Reading, Pennsylvania. Dr. Shibib has authored more than 35 technical journal and conference articles and has given many lectures around the world on smart power IC technologies and devices. He holds eleven U.S. patents and has many others pending in the field of power semiconductor devices

and technologies. He edited two books in the field and is the Chairman of the EDS Technical Committee on Power Devices and ICs. Dr. Shibib is an IEEE Fellow, a Distinguished Lecturer, an editor of the *Transactions on Electron Devices* for Solid State Power, an editor of the EDS Newsletter, and has been a member of several IEEE conference technical committees, such as IEDM, ISPSD, and PESC.

FIRST-TIME ELECTEES:



KENNETH F. GALLOWAY is currently serving as Dean of the School of Engineering and Professor of Electrical Engineering at Vanderbilt University. Dr. Galloway's research interests include solid-state devices and semiconductor technology. He has authored or co-authored over one hundred and fifty technical publications and was elected a Fellow of the IEEE in 1986 for "Contributions to the study of radiation effects in microelectronics. He was General Chairman of the 1985 IEEE Nuclear and Space Radiation Effects Conference and General Chairman of the 1997 IEDM (International Electron Devices Meeting). Dr. Galloway received the BA. degree from Vanderbilt University in 1962 and the Ph.D. degree from the University of South Carolina in 1966.



STEVEN J. HILLENIUS received his Ph.D. degree in physics from the University of Virginia, Charlottesville, VA in 1979. He was an Assistant Professor of physics at the University of Virginia from 1978 to 1981. From January 1981 to present he has worked for Bell Laboratories in the field of research and development of VLSI Technologies. He is currently the Head of the ULSI Device Technology Research Department where he manages the research of a department consisting of device research and computer aided design of processing and devices. Dr. Hillenius has eight patents in the area of semiconductor

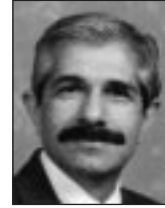
device structures and has published over 40 articles on semiconductor devices and processing. He is a Fellow of the IEEE.



CHENNUPATI JAGADISH received his Ph.D. degree in Semiconductor Physics from the University of Delhi in 1986. He worked at S.V. College, Univ. of Delhi during 1985-88 and Queen's University, Kingston, Canada during 1988-90. In 1990, he joined the Australian National University, where he is currently a Senior Fellow and Head of the Semiconductor Growth, Characterization and Devices Group in the Department of Electronic Materials Engineering. His research interests are in optoelectronic devices, photonic device integration, quantum well intermixing, epi-

taxial growth of quantum structures and ion implantation. He has co-authored a book on "semiconducting transparent thin films" and edited two conference proceedings and published more than 200 papers in refereed journals and conference proceedings. He has served on several conference committees. He is currently chair of the EDS Optoelectronic Devices Technical Committee, Chair of the Australian Chapter of EDS & LEOS, member of EDS Publications Committee and member of EDS Compound Semiconductor Integrated Circuits Technical Committee.

RAJENDRA SINGH is D. Houser Banks Professor in the Department of Electrical and Computer Engineering, and the Director of the Center for Silicon Nanoelectronics at Clemson University. His research contributions are in rapid thermal process-



ing, solar cells, dielectrics and semiconductor manufacturing. He has published over 220 papers in various journals and conference proceedings. He has presented over 50 keynote and invited talks in various conferences. Professor Singh's most recent award includes the 1998 Thomas D. Callinan Award of The Electrochemical Society. He is Fellow of the Society of Optical Science and Engineering, American Association of Advancement of Science, and ASM International, the materials information society.

*Louis C. Parrillo
Motorola, Inc.
Austin, TX*

EDS Winners of 1999 IEEE Medals or Corporate Recognition Awards

Two EDS members won 1999 IEEE awards. Dr. B. Jayant Baliga won the IEEE Lamme Medal which is for "Meritorious achievement in the development of electrical or electronic apparatus". Dr. Bernard S. Meyerson won the Ernst Weber Engineering Leadership Recognition which is for "Exceptional managerial leadership in the fields of interest to IEEE".



Dr. B. Jayant Baliga, a Distinguished University Professor of Electrical Engineering at North Carolina State University in Raleigh, won the IEEE Lamme Medal "For his sustained, innovative contributions to power semiconductor technology which has had widespread impact on power electronics". He received his B. Tech. degree from the Indian Institute of Technology, Madras in 1969, and obtained his M.S. and Ph.D. degrees in 1971 and 1974 from Rensselaer Polytechnic Institute, Troy, New York.

While working at the GE Corporate Research Laboratory from 1974 to 1988, he invented numerous power device structures now widely used by the power electronics industry. Among these is the Insulated Gate Bipolar Transistor (IGBT),

now produced by many international semiconductor companies for use in appliance controls, robotics, motor control, automotive ignition, electric cars, and most recently in a compact, portable defibrillator for cardiac arrest victims. He is the Director of the Power Semiconductor Research Center, an industrial consortium he founded at North Carolina State University in 1991. Dr. Baliga has authored 8 books, contributed to 20 book chapters and written over 500 publications. He holds 99 U.S. patents. Previous IEEE Awards include the IEEE Liebmann Field Award (1993) and the EDS J. J. Ebers Award (1998). He was elected an IEEE Fellow in 1983 and a member of the National Academy of Engineering in 1993.



Dr. Bernard S. Meyerson, Director of Telecom Technologies, managing organizations within both the IBM Research Division and IBM Electronics, won the IEEE Ernst Weber Engineering Leadership Recognition "For his leadership in bringing about seminal advances in growth and control of Si/SiGe heterostructures enabling the emergence of new technological applications". He completed his Ph.D. in Physics at the City College of the City of

New York in 1980. At the completion of his Ph.D., he joined IBM as a Research Staff member. In the early 1980's, his efforts within IBM focused on the fundamentals of electronic materials film growth, working in both the silicon and carbon based materials systems. In the mid-1980's, he implemented many of the chemical concepts derived from his basic studies in silicon epitaxy into a film growth technique known as Ultra-High-Vacuum/Chemical Vapor Deposition (UHV/CVD). In the late 1980's, Dr. Meyerson became the manager of a team that drove the development of extremely high performance silicon: germanium heterojunction bipolar transistors. In the early 1990's, his work on novel structures based on relaxed SiGe heteroepitaxial layers led to the first high performance SiGe High-Electron Mobility Transistors (HEMTs). In 1998, IBM's analog and mixed signal technology development was consolidated under Dr. Meyerson.

Dr. Meyerson has published several hundred papers and holds in excess of 40 patents. He is an IBM Fellow and a Fellow of the American Institute of Physics.

*H. Craig Casey, Jr.
Duke University
Durham, NC*

In Memory of Roger J. Van Overstraeten



Roger J.
Van Overstraeten

Professor R. Van Overstraeten, President, chief executive officer and founder of the Interuniversity Microelectronics Center (IMEC), which was set up by the Flemish Government in 1984,

died in Leuven, Belgium, April 29, 1999, at the age of 62. His death is not only a great personal loss for his immediate family, friends and acquaintances, it is also a huge loss for IMEC, Flanders and the microelectronics community.

Roger Joseph Van Overstraeten was born in Vlezenbeek on December 7, 1937. He received his civil engineering degree in electronics and mechanics from the University of Leuven (K.U. Leuven, Belgium), in 1960 and his Ph.D. degree in physical electronics at Stanford University in 1963. Two years later he was appointed as associate professor of the University of Leuven and became full professor in 1968. Professor Van Overstraeten set up the ESAT laboratory (Electronics, Systems, Automation and Technology) at the University of Leuven, which he directed until 1984. He was chairman of the Electrical Engineering Department from 1981 to 1984 and was director of the Microelectronics Division of Leuven Research and Development from 1972 to 1984. Van Overstraeten was guest professor at the University of Florida (1974), at

Stanford University (1979) and at Pilani (India, 1980). He served on numerous advisory and editorial boards and acted as chairman or program chairman at various international conferences. For many years he was a member of the Administrative Committee of the Electron Devices Society, serving as an Elected Member from 1991-1996. While he was an AdCom member in the IEEE Electron Devices Society, Van Overstraeten played a key role in the expansion of the Society in Europe. The initiative, which he helped support, resulted in the expansion of our European chapters from 8 to over 30 and has helped make Europe the fastest growing region of the IEEE. He has co-authored a book on Photovoltaic Conversion, numerous book chapters and over 100 publications in scientific journals, mainly in the field of physical electronics and photovoltaics.

Van Overstraeten was awarded on numerous occasions for his considerable merit. He received the INSEAD Innovation Prize in 1986, an honorary doctoral degree at the "Institut National Polytechnique de Grenoble" in 1987, the Becquerel Prize in 1989, the "Flanders' Technology International Innovation Award" in 1991, the European SEMI Prize "for the huge impact of IMEC on the semiconductor industry" in 1994, the title of "Knight of Quality Assurance" by the Prime Minister of the Flemish Government for his efforts with a view to obtaining the ISO 9001 certificate in 1995, and received in 1998 the 'IEEE Frederick Philips Award' "for leadership in the creation

and management of IMEC". He was also a member of the Royal Flemish Academy of Science and a fellow of the IEEE (Institute of Electrical and Electronics Engineers). From 1984 on, Van Overstraeten has been President of IMEC and the inspiration behind it. His broad vision on microelectronics and the future of the high-tech industry made IMEC what it is today – the largest independent research centre in Europe in the field of microelectronics and related fields. Today at IMEC, about 820 engineers, scientists and technicians develop new technologies in microelectronics for tomorrow's industry. Under his guidance, IMEC set up no less than fifteen spin-off companies in as many years. He created a new venture capital fund, 'IT Partners', oriented towards information technology and developed many other initiatives in the Flanders region.

In 1990 he was elevated to the nobility by King Boudewijn as Baron Roger Van Overstraeten.

In memory of Professor R. Van Overstraeten's wish to encourage young scientists to face the challenges of microelectronics, it has been decided to create a foundation "Stichting Roger Van Overstraeten". Donations can be made to the foundation's bank account no. 230-0019661-87 (Generale Bank, Brussels, Belgium).

Roger Van Overstraeten was a good Professor, a great scientist and an excellent manager. His wife Agnes, his two daughters, Annick and Sofie, and his granddaughter, Alexandra, born at the beginning of the year, survive him.

Cor L. Claeys
IMEC Leuven, Belgium

In Memory of Rolf Landauer

Rolf Landauer, a long time member of EDS, died April 28th of a malignant brain tumor at the age of 72. He was an IEEE Life Fellow, and received the IEEE 1998 Edison Medal for "Pioneering contributions to the physics of computing and conduction".

Landauer was born in Stuttgart, Germany in 1927. After his father's death, the family emigrated the U.S. in 1938. He entered Harvard in 1943 and graduated in 1945, served as an electronics technician in the Navy, and returned to Harvard, receiving a Ph.D. in 1950. He went to the Lewis Laboratory of NACA (a precursor of NASA), and then joined IBM's fledgling research laboratory in Poughkeepsie, NY, in 1952. He remained with IBM through the remainder of his career.

Landauer's research covered a wide range of topics, but he is most remembered for his pioneering research in the physics of information processing, and in transport theory. His landmark 1961 paper, "Irreversibility and Heat Generation in the



Rolf Landauer

Computing Process", established the physics of information processing as a serious subject for scientific inquiry, and he wrote several seminal papers between 1957 and 1975 on transport theory.

Landauer received many awards in his career, including the Oliver E. Buckley Prize of the American Physical Society, the Stuart Ballantine Medal from the Franklin Institute, the Centennial Medal from Harvard, and an honorary degree from Technion in Israel. He was elected a member of the European Academy of Arts and Sciences, the National Academy of Science, and the National Academy of Engineering. For his 70th birthday, the journal *Superlattices and Microstructures* had an issue of 50 articles and 515 pages in tribute to Landauer.

He is survived by his wife of 48 years, the former Muriel Jusim, three children, and three grandchildren.

Call for Nominations - EDS AdCom

The Electron Devices Society invites the submission of nominations for election to its Administrative Committee (AdCom). Presently, the AdCom meets twice per year and is composed of 22 members. Eight members will be elected this year for a term of three years, and a maximum of two consecutive terms is allowed. In 1999, the election will be held after the AdCom meeting on Sunday, December 5th. Electees begin their term in office on January 1, 2000.

Nominees are being sought to fill the slate of candidates. Nominees may be self-nominated, or may be nominated by another person; in the latter case, the nominee must have been contacted and have agreed to serve if elected. Any member of EDS in good standing is eligible to be nominated. As another condition for nomination and election, a nominee must be willing to attend the two annual AdCom meetings.

Please send your nominee's name, address, and supporting information to the

EDS Executive Director, W.F. Van Der Vort (see page 2 for contact information) in time to be received by the deadline of October 22, 1999. It is very desirable that submissions include a biographical summary in a standard two-page format. The EDS Executive Office can provide you with an example of the format. If you have any questions regarding the nomination requirements or process, feel free to contact the Nominations and Elections Chair, Louis C. Parrillo (see page 2 for contact information).

New IEEE Council - Intelligent Transportation Systems

In January, 1999, the IEEE Technical Activities Board established a new Council to focus the multiple intelligent transportation systems related interests of members of a large number of existing IEEE societies. The Intelligent Transportation Systems Council's purpose is to advance and coordinate work in the field of ITS both within the IEEE and to focus these efforts in the name of the IEEE within the larger ITS community. The Council's Field of Interest involves the theoretical, experimental and operational aspects of electrical and electronics engineering and information technology as applied to all intelligent transportation efforts. The ITS Council welcomes the participation of all IEEE members who have an interest in the application of cutting edge electronics technology to transportation systems.

The Electron Devices Society has been a charter member of both the ITS Council and the predecessor TAB ITS Committee. Along with 17 other societies, we in the EDS look forward to this opportunity to more directly interact with other IEEE professionals involved in the application of many of the components, devices and materials that we develop. The establishment of this Council represents a major opportunity to extend the impact of our work, as well as to identify new applications for component development.

The first issue of the ITS Council's Journal, *IEEE Transactions on Intelligent Transportation Systems*, is scheduled for March, 2000. This publication will focus on the design, analysis and control of information technology as it is applied to transporta-

tion systems. A call for papers has been posted on the Council's website (www.ieee.org/its). Initial suggested topics of particular interest to EDS members include sensors, communications, displays and artificial speech, reliability and quality assurance, and imaging. In addition, the first issue of the ITS Electronic Newsletter has been distributed by e-mail, and copies can be obtained by sending e-mail to majordomo@its.UniPV.it with "subscribe itsnews" in the message body.

Further information related to the Intelligent Transportation Systems Council can be obtained from the Council website, from the council officers, or from your EDS representatives to the Council:

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Chicago, IL*

Chapter Subsidies Announcement

Requests for subsidies from EDS chapters are due on August 2, 1999. Last year, the EDS AdCom awarded funding to 50 chapters, with most amounts primarily ranging from US\$250 to US\$1,000. In May, Chapter Chairs were sent an e-mail notifying them of the current funding cycle. A list of guidelines was included with each e-mail. In general, activities which are considered fundable include, but are not limited to, membership promotion travel allowances for invited speakers to chapter events, and support for student activities at local institutions. Subsidy requests should be sent via e-mail, fax or mail to the EDS Administrator, Amanda L. Papasso. Her contact information is the same as W.F. Van Der Vort's, included on page 2. Final decisions concerning subsidies will be made by the EDS Regions/Chapters Committee in early October. Subsidy checks will be issued by early December.

EDS Chapter Partners Program

At its May 4, 1997 meeting, the EDS Administrative Committee (AdCom) approved a mentoring program for EDS chapters. The EDS Chapter Partners Program requires that all "elected" AdCom Members participate in the Program by partnering with approximately three EDS chapters. All EDS officers, the Jr. & Sr. Past Presidents and 'Ex-Officio' AdCom members are also invited and encouraged to be 'Partners'. The following is a list of the responsibilities of an EDS Chapter Partner.

- Establish a continuing dialogue (via e-mail and/or telephone) with the chapter chair and other members
- Attend or arrange for a lecturer/AdCom member to attend at least one chapter meeting per year to give a technical talk and/or presentation concerning IEEE and EDS
- Whenever possible, meet with Chapter Chairs/officers at a regional chairs chapter meeting scheduled in conjunction with one of EDS' conferences
- Provide annual reports to the EDS Regions/Chapters Committee
- Ensure that the chapter has reported their meetings to their IEEE section

The partners will try to combine visits to chapters with their travel. If necessary, some travel support will be provided by AdCom.

Currently, there are 31 chapter partners. If you would like to participate in this Program, please contact the EDS Executive Office (see contact information on page 2).

EDS Chapter Partners List (as of 5/20/99)

ROBERT G. ADDE

- ED Benelux
- AP/CAS/ED/MTT North Italy
- CAS/ED Switzerland
- ED/MTT France

ILESANMI ADESIDA

- AP/ED/MAG/MTT Northeastern University Student Branch
- CAS/ED/EMB/PEL Venezuela
- ED Cuba

MICHAEL S. ADLER

- MTT/ED Moscow
- MTT/ED/AP/CPMT Saratov-Penza

VIJAY K. ARORA

- SP/CAS/ED Ottawa
- AES/AP/ED/MTT/GRE/LEO East Ukraine
- ED Malaysia

SHOJIRO ASAI

- ED Beijing

HERBERT S. BENNETT

- ED Central New England
- CAS/ED Pikes Peak
- SP/AP/CAS/ED Pullman-Moscow

APRIL S. BROWN

- ED/LEO Atlanta
- ED/MTT Central Virginia
- ED/MTT Virginia Mountain

JAMES T. CLEMENS

- AP/ED/MTT Princeton/Central Jersey
- CAS/ED North Jersey
- ED/CPMT Orlando

T. PAUL CHOW

- ED Mid-Hudson
- ED Schenectady
- MTT/ED Minsk Belarus

KENNETH F. GALLOWAY

- AP/ED/MTT/UFFC/LEO Phoenix
- ED Seattle
- ED Dallas

GADY GOLAN

- MTT/AP/ED Turkey
- AP/ED/LEO/MTT United Kingdom & Republic of Ireland
- ED/SSC Yugoslavia
- ED Univ. of Nis Student Branch

BRUCE F. GRIFFING

- AP/IM/ED/MTT Milwaukee
- AP/ED/MTT Southeastern Michigan
- ED Germany

STEVEN J. HILLENUS

- ED Boise
- ED/LEO Victorian
- ED/MTT Oregon

HIROSHI IWAI

- MTT/AP/ED Finland
- ED Korea
- CPMT/ED/R Singapore

CHENNUPATI JAGADISH

- ED/LEO South Africa
- MTT/ED/AP/CPMT West Ukraine
- ED Hong Kong

RENUKA P. JINDAL

- ED/MTT India
- ED Bombay

LUCIAN A. KASPRZAK

- ED/MTT/LEO New Jersey Coast
- ED Lehigh Valley
- ED/CPMT Philadelphia
- AP/ED/MTT/MAG/LEO Saint Louis

STEPHEN V. KOSONOCKY

- CAS/ED Montreal
- ED/CAS Buenaventura

JAMES B. KUO

- MTT/AP/ED Czechoslovakia
- MTT/ED/AP/CPMT Nizhny Novgorod
- ED Taipei

E. HERBERT LI

- AP/CAS/ED/MTT Kitchener- Waterloo

- MTT/ED Republic of Georgia
- ED/LEO Australian Capital Territory

IMRE MOJZES

- AP/ED/MTT/COM Hungary
- ED Poland
- MTT/ED/AP Lithuania
- MTT/ED/AP St. Petersburg
- MTT/ED/CPMT Central Ukraine

ARLENE A. SANTOS

- C/ED Maine
- CAS/ED/CPMT/LEO Toronto
- ED/SSC Baltimore
- ED Rochester

KRISHNA SHENAI

- ED Sweden
- ED Mexico
- ED CINVESTAV-IPN Student Branch
- AP/ED/MTT Rio de Janeiro
- ED CINVESTAV-Guadalajara Student Branch

M. AYMAN SHIBIB

- ED/MTT/LEO Cleveland
- ED Northern Virginia
- ED/MTT Egypt

RAJENDRA SINGH

- MTT/AP/ED Florida West Coast
- ED Central Texas
- AP/ED/MTT/MAG Houston
- ED Santa Clara Valley

RICHARD D. SIVAN

- ED Israel

NINOSLAV D. STOJADINOVIC

- ED/MTT Greece
- ED Central & South Italy
- ED Romania

S.C. SUN

- AP/MTT/ED/GRS/LEO Springfield
- MTT/ED/CPMT/COM Novosibirsk
- ED Novosibirsk State Technical Univ. Student Branch
- ED Hanyang University Student Branch
- ED/SSC Seoul

KUNIO TADA

- MTT/ED/AP/CPMT Bulgaria
- AP/MTT/ED Thailand
- ED Tokyo

JERRY M. WOODALL

- ED/LEO Columbus
- ED Univ. of Illinois at Urbana- Champaign Student Branch
- ED/CAS/SSC Chicago

PAUL K.L. YU

- AP/ED/MTT San Diego
- AP/CAS/ED/C/CS Spokane
- ED Spain
- ED/MTT/AP Portugal

EDS Administrative Committee Ex-Officio Members

The EDS Administrative Committee is comprised of 4 Officers, 1 Sr. Past President, 1 Jr. Past President, 22 Elected Members-At-Large and the 'Ex-Officio Members' listed below. The Officers, Past Presidents and Elected Members are all listed on page 2.

STANDING COMMITTEE CHAIRS

(Two-year renewable term and voting privileges)

Awards	H.C. Casey, Jr.
Educational Activities	J.M. Woodall
Fellow Evaluations	L.C. Parrillo
Meetings	J.T. Clemens
Membership	T.P. Chow
Newsletter	J.K. Lowell
Nominations and Elections	L.C. Parrillo
Publications	S.J. Hillenius
Regions/Chapters	H. Iwai
Short Courses (Adhoc Committee)	J.C.S. Woo

TECHNICAL COMMITTEE CHAIRS

(Two-year renewable terms and no voting privileges)

Compound Semiconductor IC	H.S. Bennett
Device Reliability Physics	L.A. Kasprzak
Displays	R.M. Dawson
Electronic Materials	J.M. Woodall
Microelectromechanical Systems	R.T. Howe
Optoelectronic Devices	C. Jagadish
Photovoltaic Devices	J.D. Meakin
Power Devices and ICs	M.A. Shibib
Semiconductor Manufacturing	A.A. Santos
Vacuum Devices	J.A. Dayton, Jr.
VLSI Technology and Circuits	H.S.P. Wong

PUBLICATION EDITORS

(One-year renewable term and no voting privileges)

Electron Device Letters	Y. Taur
Electron Devices, Transactions on	R.P. Jindal
EDS Newsletter	K. Shenai
EDS Home Page	L.G. McClrath
Applied Superconductivity, Transactions on	J.X. Przybysz
Circuits and Devices Magazine	R.W. Waynant
Electrochemical and Solid-State Letters	P.A. Kohl
Electronic Materials, Journal of	T.C. Harman
Lightwave Technology, Journal of	R.C. Alferness
Microelectromechanical Systems, Journal of	R.S. Muller
Semiconductor Manufacturing, Transactions on	G.S. May
Technology Computer Aided Design, Journal of	M.E. Law

PUBLICATION REPRESENTATIVES

(One-year renewable term and no voting privileges)

Circuits and Devices Magazine Editorial Board	J.B. Kuo H.G. Parks
Electrochemical and Solid-State Letters Advisory Board	A.S. Brown W.D. Johnston, Jr. J.M. Woodall
Journal of Electronic Materials Editorial Oversight Board	A.S. Brown M.R. Melloch G.E. Stillman

Journal of Lightwave Technology Steering Committee	W.D. Johnston, Jr. J.K. Lowell,
Journal of Microelectromechanical Systems Steering Committee	R.T. Howe K.D. Wise P.M. Zavracky
Today's Engineer Magazine	J.K. Lowell
Transactions on Applied Superconductivity Editorial Board	R.H. Ono Vacant
Transactions on Semiconductor Manufacturing Editorial Board	F.H. Dill, Jr. L.C. Skinner, II

IEEE REPRESENTATIVES

(One-year renewable term and no voting privileges)

IEEE Center for the History of Electrical Engineering	L.A. Kasprzak
IEEE Educational Activities Board	A.A. Santos
IEEE GOLD Program	C.D. Salomonson
IEEE Intelligent Transportation Systems Council	K. Shenai J.R. Troxell
IEEE Press	K.K. Ng
IEEE Region 8 Chapter Committee	C.L. Claeys
IEEE Sensors Council	J. M. Giadino P. M. Zavrasky
IEEE Standards	A.R. Hefner
IEEE TAB Magazines Committee	S.J. Hillenius
IEEE TAB New Technology Directions Committee	S. Knight
- Electronic Nose Sub-Committee	R.S. Payne
IEEE TAB Transactions Committee	R.P. Jindal
IEEE-USA Professional Activities Committee for Engineers	A.A. Santos
IEEE-USA Technology Policy Council Committees	
• Communications & Information Policy	V. Arora G.M. Metze T.P. Pearsall
• Energy Policy	F.R. Shapiro
• Research & Development	F.H. Dill E.H. Li R. Singh

IEEE STAFF

(No voting privileges)

IEEE Executive Director	D.J. Senese
IEEE Technical Activities Board Secretary	M. Ward-Callan
EDS Executive Director	W.F. Van Der Vort
EDS Administrator	A.L. Papasso
EDS Administrative Assistant	C.C. Lin
EDS Department Assistant	L.J. Riello
EDS Department Assistant	B. Weinbaum

CHAPTER CHAIRS

(Ex-officio members with no voting privileges)

There are currently 97 EDS chapters located in the following IEEE Regions:

Regions 1-6 (U.S.)	39	Region 9 (Latin America)	6
Region 7 (Canada)	4	Region 10 (Asia and Pacific)	13
Region 8 (Europe, Middle East & Africa)	35		

Regional and Chapter News

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

Report on an Upcoming Conference — by Francois Hebert

Due to the growing complexity of VDSM process technologies, the issues affecting design quality, such as reliability & yield, are becoming determining factors in the overall success of the electronic products.

Simultaneous compliance to the traditional speed/power/area specifications, as well as the specifications for reliability and yield, requires careful consideration of many complex and often conflicting design parameters, and trade off between them. In this regard, EDA tools and design flows play an increasingly important role toward achieving total design quality. The First International Symposium on Quality of Electronic Design (ISQED 2000), to be held in March 2000, emphasizes a holistic approach toward design quality. It provides a forum to present & exchange ideas and to promote research focused entirely on Design Tools and Design Flows & Techniques employed to ensure the Quality of the Electronic Design. The conference audiences are primarily the designers of the VLSI integrated circuits & systems (SoC & IP) and those involved in the development and/or management of EDA/CAD tools and design flows.

In addition to EDA/CAD tools, and design flows dealing with a variety of device & interconnect issues, ISQED attempts to address quality of device & block modeling, quality of IP blocks, design for testability, management of design database, and quality implications of tools inter-operability. The conference web site is at <http://www.isqed.org> or contact the conference chair, Dr. Ali Iramanesh (alii@synopsys.com).

— Paul K. L. Yu, Editor

Europe, Middle East & Africa (Region 8)

AES/AP/ED/MTT/GRS/LEO East Ukraine Chapter

— by Alexei Kostenko

The Third International Kharkov Symposium, "Physics and Engineering of Millimeter and Submillimeter Waves" (MSMW'98),



MSMW'98 participants, with the Kharkov State University building in the background.

took place in Kharkov, Ukraine, September 14-18, 1998. The symposium was organized by the Usikov Institute for Radiophysics and Electronics of the National Academy of Sciences of Ukraine, Institute of Radio Astronomy of the National Academy of Sciences of Ukraine, Kharkov State University, IEEE AES/AP/ED/MTT/GRS/LEO East Ukraine Chapter and Ukrainian URSI Committee. Holding such a symposium would not have been possible without the generous support of the MSMW'98 sponsors: URSI, IEEE ED and MTT societies, US Army European Research Office and Science and Technology Center in Ukraine.

The MSMW symposium has been held in Kharkov several times since 1978 as a regular Former Soviet Union meeting on MM and SUBMM waves and applications. It has become a major event in the area of millimeter and submillimeter waves; and since 1991, it has been well known as the International Kharkov Symposium. The number of registered participants of MSMW'98 was 148: 92 from Ukraine, 17 from Russia, 8 from Germany, 2 from China, and one each from Great Britain, Japan, Belarus, Brazil, Mexico and Turkey, respectively. A total of 198 papers, including 9 keynote invited ones, were presented. Two-volume MSMW'98 proceedings, counting over 800 pages, have been published before the conference. Eight MSMW'98 awards, "in recognition of remarkable presentation at the young scientists paper competition" went to the following young scientists: Rolf Judaschke (Technische Universität Hamburg-Harburg, Hamburg, Germany); Michael Wollitzer (Diemler-Benz Forschung Ulm, Ulm,

Germany); Koki Watanabe (Kyushu University, Fukuoka, Japan); Alexander Zamyatin (Moscow Institute of Physics and Technology, Dolgoprudnyi, Moscow Region, Russia); Kirill Rybakov (Institute of Applied Physics of Russian Academy of Sciences, Nizhny Novgorod, Russia); Vladimir Tkachenko (KSU, Kharkov, Ukraine); Andrey Serebryannikov (IRA NASU, Kharkov, Ukraine); and Andrey Andrenko (IRE NASU Kharkov, Ukraine).

The next symposium will most likely be held again in Kharkov in 2001.

MTT/ED/CPMT Central Ukraine Chapter

— by Yuri Poplavko

The MTT/ED/CPMT Central Ukraine Chapter is a relatively new IEEE chapter that united Ukrainian scientists from several cities: Kiev, Kharkov, Simferopol and Sevastopol. The Ukraine is now in a deep economic crisis, and its education system faces great difficulties. In such circumstances, a friendly support from IEEE is even more valuable for Ukrainian scientists, engineers and students. The total membership of the Chapter is currently 26, and it is constantly increasing.

The Chapter took part in the organization of the International Conference on "Microwave Telecommunication Technology" in Crimea, Sevastopol, September 14-27, 1998 which included a workshop, "Integrated Microwave Telecommunication Systems". There were more than 150 participants from Russia, Ukraine, Belarus, South Korea, Turkey, the Emirates etc. More than 200 reports were published in two books of proceedings, counting about

800 pages. The next Microwave and Electronics Conference is planned to be held in Crimea in September 1999. Chapter members took part in four other international conferences in South Korea, Holland, USA and Russia. In the framework of a Distinguished Lecturer Program, Yuri Poplavko, gave two lectures in South Korea (Seoul National University and Korean Advanced Institute of Science and Technology).

Members of the MTT/ED/CPMT Central Ukraine Chapter received several IEEE periodicals free of charge. Some of those periodicals were granted to libraries (such as the libraries of the National Ukrainian University and the National Technical University of Ukraine). Chapter members were regularly informed about scientific meetings organized by IEEE all over the world.

For further information, please contact the Chapter Chair: Prof. Yuri Poplavko, Microelectronics Department, National Technical University of Ukraine, 37, Peremogi Ave., Kiev, Ukraine 252056, E-Mail: yuri@poplavko.polytech.kiev.ua.

MTT/ED/AP/CPMT Saratov-Penza Chapter

— by *Michael Davidovich*

The IEEE MTT/ED/AP/CPMT Saratov-Penza Chapter was involved in organizing two big international conferences in the city of Saratov. These were the International Conference on Actual Problems of Electron Devices Engineering (APEDE'98), September 7-9, 1998, at Saratov State Technical University, and the 5th International School on Chaotic Oscillations and Pattern Formation (CHAOS'98), October 6-10, 1998, at Saratov State University. The Third Chapter Workshop on "CAD and Numerical Methods in Applied Electrodynamics and Electronics" was also held on September 9, 1998, in conjunction with APEDE'98. The conferences were very successful and useful for scientific exchange and cooperation.

The year of 1999 started by commemorating 90 years of jubilee of Saratov State University (SSU) - the tenth university in Russia at the beginning of 20th century. The celebration of this anniversary began in February with a weekly circle of lectures in which the historical and scientific aspects of SSU action in this century are discussed. The role of SSU in the development of electronics and radio physics in Russia has been underlined in these lectures in connection with the biographies and scientific activities of its founders and professors. The lecture circles will continue throughout the year.

From March 2 to 6, 1999, the XI International Winter School-Conference on Microwave Electronics and Radio Physics (MER'99) was held in the Saratov suburb sanatorium "Salute". The first such conference was held near Saratov in 1970. MER'99 was organized by SSU, State Educational and Scientific Center "College" of SSU, Saratov Branch of the Radio Engineering and Electronics Institute of the Russian Academy of Sciences, IEEE MTT/ED/AP/CPMT Saratov-Penza Chapter, Ministry for Young People Affairs, Sport and Tourism of Saratov Region, and sponsored by the Ministry for General and Professional Education of Russia, Russian Foundation for Basic Research, and the IEEE Electron Devices Society. MER'99 was a low cost event, enabling the scientists from the former Soviet Union to take part. seventy-four lectures and reports from Moscow, St. Petersburg, Nizhny Novgorod, Rostov, Samara, Penza, Saratov (Russia), and Kharkov (Ukraine) were presented there.

From September 20 to 21, 1999, we plan to hold the Fourth Chapter Workshop "CAD and Numerical Methods in Applied Electrodynamics and Electronics". We are looking forward to increasing our chapter cooperation with IEEE, other sections and chapters.

— *Ninoslav Stojadinovic, Editor*

ED/MTT Egypt Chapter

— by *Ibrahim Salem*

Some of our chapter activities are summarized below:

1. The 16th National Radio Science Conference held at Ain Shams University - Faculty of Engineering on 23-24 Feb.1999 included 11 papers on electron devices and photonics. The total number of accepted papers was 85.
2. The chapter is preparing a workshop on Teaching Photonics. This workshop will be held on May 18, 1999 at the National Institute of Laser Enhanced Sciences, Cairo University, Giza.
3. The chapter, jointly with the Egyptian National URSI committee, is preparing the 17th National Radio Science Conference, to be held at Minufiya University, Minouf on 22-24 Feb. 2000.

For further information, please contact the Chapter Chair, Professor Ibrahim A Salem, 17 Elkobbba Street - Heliopolis, Cairo - 11341, Egypt. TEL: (202) 258-0256; FAX: (202) 594-1270, E-Mail: isalem@brainy1.ie-eg.com, OR: ia.salem@ieee.org

ED/MTT Greece Chapter

— by *Nikolaos Uzunoglu*

Ongoing and future activities may be summarized as:

1. Organization of a seminar to final year students on design and development of MMICs. The seminar is addressed to students of the National Technical University of Athens and the University of Athens.
2. Preparation of the Teaching Notes for IC Design and Development using CAD Tools.
3. Preparation of the organization of the International Symposium on Applied Electromagnetism of the Trans Black Sea Region. The planned date is April 2000.
4. Preparation of a Summer School on Microelectronics for the Balkan countries.

For further information, please contact the Chapter Chair, Professor Nikolaos K. Uzunoglu, National University of Athens, Dept. Electrical & Computer Eng., Division of Electrosience, Iron Polytechniou 9, Zografou 15773, Athens, Greece. TEL: 30-1-7723556; FAX: 30-1-7723557; E-Mail: nuzu@cc.ece.ntua.gr.

ED Israel Chapter

— by *Gady Golan*

A Chapter meeting was held on Monday May 2, 1999 10:00 a.m.-1:00 p.m. at the auditorium of the Center for Technological Education, Holon. The meeting subject included - "Micro Sensors, CMOS Compatible Micro-Machining, Micro-Systems Implemented in CMOS Technology and Silicon Devices as well as in II-VI Semiconductors".

The Guest Lecturer was Prof. Yael Nemirovsky, Technion IIT and EDS DL. Other lecturers included Dr. Gady Golan, Center for Technological Education, Holon and EDS DL, and the Chief scientist of El-Op - Electro Optics industry.

For further information, please contact the Chapter Secretary, Dr. Gady Golan, by E-Mail: gady@oumail.openu.ac.il, or the Chapter Chair, Professor Nathan Croitoru, Tel-Aviv University, Dept. of Electrical Engineering - Physical Electronics, Faculty of Engineering, Tel-Aviv 69978, Israel. TEL: 972-3-640-8138; FAX: 972-3-642-3508; E-Mail: croitoru@eng.tau.ac.il.

MTT/ED/AP Turkey Chapter

— by *Ayhan Altintas*

I would like to report on some electron device research in Ankara, Turkey:

Electron device research has been carried out in two major Universities in Ankara, Middle East Technical University and Bilkent University. The researchers at the Electrical Engineering Department of the Middle East Technical University have recently achieved the fabrication of InSb infrared detectors on Si substrates with good performance showing the feasibility of monolithic integration of the read out circuit and detector array on Si substrate. They were also successful in constructing an integrated thermopile structure compatible with the standard CMOS process. Other electron device research studies at the Department are VLSI design, silicon micro-machining, un-cooled infrared detectors, III-V transistors, semiconductor characterization and advanced device modeling.

Researchers at Bilkent University are working on three different electron devices related projects: High-performance photodetectors, cylindrical lasers, and photonic crystal based millimeter wave detectors. In the area of high-performance detectors, Bilkent researchers have been able to reach 100 GHz 3-dB frequency responses along with 100% quantum efficiency performance by using resonance cavity enhanced photodiodes. By using cylindrical cavities, they were able to see laser action along with high-Q factors. Photonic crystal based frequency selective detectors yielded a 3500x enhancement compared to conventional detectors.

For further information, please contact the Chapter Chair, Professor Ayhan Altintas, Bilkent University, Dept. of Electrical Engineering, Ankara 06533, Turkey. TEL: 90-321-266-4000 ext. 1489; FAX: 90-312-266-4126; E-Mail: a.altintas@ieee.org.

MTT/ED/AP/LEO UK & RI Chapter

— by *Ali Rezazadeh*

As the new Chapter Chair, I am pleased to report on some of our Chapter activities:

The Chapter AdCom Meeting of 10 March 1999, held at King's College London, was followed by a well attended evening lecture by Dr. Ali Rezazadeh on "HBTs for Microwave and Optoelectronic Applications".

A half day Seminar was held on 21 April 1999 at the City University, London, on "Semiconductor Lasers for WDM Systems", by Dr Jens Buus.

An evening lecture was held on 22 April 1999 at the IEE London on "Wide bandgap microwave power amplifiers" by Bob Trew.

The Chapter, in cooperation with The

University of Surrey and technical co-sponsorship by the IEE, organized a Workshop on 5 - 6 May 1999 at The University of Surrey, on "Non-linear Device Characterization and Use in RFIC and MMIC Power Amplifier Design".

The 1999 High Frequency Postgraduate Student Colloquium is planned for 16-17 September 1999 at The University of Leeds. Should you have an interest to participate in this event, please contact Dr Stavros Iezekiel at University of Leeds, E-Mail: s.iezekiel@elec-eng.leeds.ac.uk, or the Chapter Chair at the contact information listed below.

The "7th IEEE International Workshop on Electron Devices for Microwave and Optoelectronic Applications - EDMO '99", jointly organized by the Chapter and King's College London, and with technical co-sponsorship by EDS, is planned for 22 - 23 November 1999 at King's College London. The call-for-papers abstract deadline is 10 September 1999, and details are available from the Chapter Chairman, Ali Rezazadeh.

An evening lecture is planned for 14 December 1999 at King's College London, on "Passive Radiometry", by Roger Appley.

For further information, please contact the Chapter Chair, Dr. Ali A Rezazadeh, Department of Electronic Engineering, King's College London, Strand, London WC2R 2LS, UK. TEL/FAX: +44 171 873 2879; E-Mail: a.rezazadeh@bay.cc.kcl.ac.uk

— *Terry Oxley, Editor*

Asia & Pacific (Region 10)

ED/LEO Australia Chapter

— by *Dr. Chennupati Jagadish*

A Workshop on Semiconductor Optoelectronics was organized on March 2, 1999. The Workshop was opened by Professor Erich Weigold, Director of Research of Physical Sciences and Engineering, Australian National University. Plenary speakers at the Workshop were LEOS Distinguished Lecturers, Professor James J. Coleman of University of Illinois at Urbana-Champaign, and Professor Pallab K. Bhattacharya of University of Michigan, Ann Arbor. The title of Prof. Bhattacharya's talk was "Quantum Well and Quantum Dot Lasers: From Strained Layer and Self-Organized Epitaxy to High Performance Devices" and Prof. Coleman's talk was on "Novel Integrable Semiconductor Laser Structures". This workshop was orga-

nized by the Research School of Physical Sciences and Engineering, Australian National University in cooperation with IEEE Victorian Chapter of EDS & LEOS. The workshop was attended by 35 people from Canberra, Sydney and Melbourne. About 10 contributed papers were presented.

ED/MTT India Chapter

— by *Dr. K.S. Chari*

In the first quarter of the year, the chapter focused on enhancing its membership drive, increasing student awareness to IEEE activities, sponsoring student fete and organizing technical talks/workshops. A brief summary of these is given below:

The Chapter Chair gave a talk to students of the Physics Department, University of Goa, on 12th January during the VLSI Design Conference. This talk highlighted the benefits of IEEE membership and other technical activities being pursued by the Chapter. About 100 students attended this talk.

The Chapter organized 2 technical talks. The first lecture on "Advanced Industrial and Bio Application" was delivered at IIT, Delhi on 9th February by Mr. Mansharmani, Deputy Director, IRDE, Dehradun. This was attended by about 25 participants. The second talk on "0.18 micron CMOS Technology - Issues & Challenges" on 22nd March at the Indian Institute of Technology, Delhi, was delivered by Dr. Sudhir Madan, Senior Member Technical Staff, Silicon Technology Development Group, Texas Instruments, Dallas, TX U.S.A. Forty-five participants including the faculty and students of IIT attended the talk.

An International Trade and Electronic Fair was held in Delhi 11 -16 February. A delegation of Korean electronics industry participating in the fair visited the Chapter on 16th February.

Dr. Charles Boyd, President, Microwave Application Group Santa Maria, USA and a Fellow of IEEE, delivered a 1-day Workshop on 24 March at Electronics and Radar Development Establishment (LRDE) Bangalore entitled, "The Joy of Designing Ferrite Phase Shifters". A total of 67 participants, including distinguished scientists drawn from various laboratories, academic institutions and industrial units attended the Workshop. The Workshop had lively and active participation by attendees throughout the 4 sessions. The event covered the entire range of phase shifters concept, design, manufacturing and application.

The Chapter also had the executive meeting of the quarter on 30 March and reviewed the progress of the chapter efforts.

At the initiative of the Chapter, the Department of Electronic Science, Kurukshetra University, Kurukshetra organized a student fete - National Symposium on Electronics Technology (NASET'99) during 15-16th April. The event consisted of theme talks, design competition and hardware applications and a quiz. The Chapter promoted the activity as a forum of bringing together the student community from neighboring institutions in the State to the event.

ED Malaysia Chapter

— by Dr. Burhanuddin Yeop Majlis

The ED Malaysia Chapter has successfully organized the 1998 IEEE International Conference on Semiconductor Electronics (ICSE '98), Nov 24-26 1998 in Bangi Equatorial. The conference was attended by 50 registered participants. The quality of the papers was very good, but the number of participants was smaller than the previous conference in 1996. This is probably due to the economic downturn in this region. In conjunction with the conference, a one day tutorial on MMIC Design was given by Dr. Steve Marsh of GEC Marconi Material Technology (UK).

In 1999, the ED Malaysia Chapter is organizing a 1999 IEEE National Symposium on Microelectronics (NSM '99), September 6 - 7 in Pangkor Island. The purpose of this symposium is to enable all researchers in microelectronics and related areas to share their research experience and activity. Even though this symposium is a national symposium, participation from Singapore is also accepted.

IEEE REL/CPMT/ED Singapore Chapter

— by YC Ng

The Singapore IEEE REL/CPMT/ED Chapter organized two technical talks. The first technical talk was presented by Prof. Roman Sobolewski from Rochester University, entitled "Ultra Fast Supercomputing Electronics and Optoelectronics". There were 18 participants. The second topic was presented by Dr. Leo G. Henry of Oryx Instruments, entitled "Transient Latch Up Testing of Integrated Circuits". There were 42 participants.

The Chapter was selected by the Electron Devices Society for the Chapter of the Year Award for 1998. This award was jointly granted to the India and Singapore Chapters. The award was given for the quality and range of activities conducted during the June 97 to June 98 period.

The Singapore Chapter is also honored to receive a prize from the IEEE Reliability Society for its performance in 1997-1998.

Professor Daniel Chan received the award on behalf of the Singapore Chapter at the International Reliability Physics Symposium (IRPS) in San Diego.

— W. K. Choi, Editor

ED Korea Chapter/ED/SSC Seoul Chapter

— by Kwyro Lee/Kwang S. Yoon

The 6th Korean Conference on Semiconductors (sponsored by Korea Physical Society, Korea Institute of Electrical Engineers, Institute of Electronics Engineers of Korea, and Yonsei ASIC Research Center, supported by Korean Semiconductor Industry Association, and cooperatively supported by SEMI Korea and IEEE ED Korea Chapter), was held at Yonsei University Feb. 9-11, 1999. KCS is the largest annual domestic technical conference on semiconductor technology. At the conference, 839 participants registered, and 354 papers (223 oral and 124 posters) were presented including invited papers, along with 33 exhibition booths. Two invited talks were given in the plenary session. Dr. Hiroshi Iwai of Toshiba, who was also invited as IEEE Distinguished Lecturer, presented a very interesting paper entitled, "Downsizing of CMOS Toward Deep Sub-0.1 Micrometer and Its Limitation". Another interesting paper, "Carbon Nano Tube, Will It Survive as Future Semiconductor Material?", was presented by Prof. J.-S. Lim from Seoul National University. To support this conference, the ED Korea Chapter prepared two best poster paper awards, which will be selected by the Program

Committee and awarded next year.

On the evening of February 9, the ED Korea Chapter had a meeting with both their Chapter Partner, Hiroshi Iwai, and the members of the SSC/ED Seoul Chapter at the SokLan Restaurant, which is one of the very famous traditional Korean Restaurants. We reported various chapter activities in 1998 and plans for 1999. For more information, contact the IEEE ED Korea Chapter Chair, Prof. Kwyro Lee, E-Mail: krlee@eekaist.kaist.ac.kr and SSC/ED Seoul Chapter Chair, Prof. Moon-Key Lee, E-Mail: mkleee@bubble.yonsei.ac.kr (<http://www.ee.inha.ac.kr/sscs-eds-chapter>).

Briefing Session for the 1998 IEDM

— by Masao Fukuma

An annual briefing session for the 1998 IEDM was held on January 20, 1999 at Kikai Shinko Kaikan, Tokyo. Five speakers were invited to report the highlights of the 1998 IEDM: A. Ishitani on silicon processes, A. Hori on silicon devices, H. Hada on integrated circuits and sensors, H. Masuda on modeling and simulation, and N. Hara on compound semiconductors and quantum devices. All reports were well organized and very useful for the audiences to learn new ideas and technology trends in electron devices. There were 120 attendees, which is about the same as last year's attendance.

Workshop Schedule Co-sponsored by the EDS Tokyo Chapter

— by Masao Fukuma

The EDS Tokyo Chapter is one of the co-sponsors for the domestic workshops (Japan-



From Rear left; Prof. Byung Kook Park, Prof. Yearn-Ik Choi, Prof. Suki Kim, Prof. Oh-kyung Kwon, Prof. Kwang S. Yoon, Prof. Hyungcheol Shin From Front left; Prof. Sie-Young Choi, Prof. Kwyro Lee, Prof. Moon Key Lee, Dr. Iwai, Prof. Choong Ki Kim. The background shows very traditional Korean octagonal window grating.

ese language) sponsored by the Institute of Electronics, Information and Communication Engineers (IEICE). The workshops are organized by two technical committees of the IEICE : one is for silicon device and materials (SDM) and the other is for integrated circuits and devices (ICD). The following are workshop schedules for fiscal year 1999.

SDM Schedule

July 22-24	International Workshop on Advanced LSIs and Devices (Pyungohang, Korea)
August 26-27	Process/Device/Circuit Simulation (Tokyo)
Sept. 27-28	Microfabrication and Clean Processes (Sendai)
Nov. 19	Lithography (Tokyo)
Dec. 9-10	Silicon and its Related Material (Kyoto)
Jan. 21	Multilevel Wiring (Tokyo)

Feb. 9-10	Ultimate Small Devices Including Single Electron and Quantum Effect Devices (Sapporo)
Mar. 6-7	MOS Devices and SOI Technology (Tokyo)
March	Ferroelectric Material and its Application (Kohchi) Chair : Hiroyuki Matsunami (Kyoto Univ.) TEL: +81-75-753-5340; FAX: +81-75-751-1576; E-Mail: matsunam@kuee.kyoto-u.ac.jp

ICD Schedule

July 22-24	International Workshop on Advances LSIs and Devices (Pyungohang, Korea)
Aug. 26-27	Process/Device/Circuit Simulation (Tokyo)
Sept. 20-21	Analog A/D Sensor and Communication LSIs

Oct. 28-29	(Sendai) Processor, DSP and Image Processing LSI (Matsue)
Nov. 24-26	Biwako Workshop on System LSIs (Shiga)
Nov. 26-27	Design Gaea (Shiga)
Dec. 9-10	Packaging and Module Technology (TBD)
Jan. 19-21	Compound Semiconductor IC and High Speed/Frequency Device and Circuits (Tokyo)
Mar. 2-3	System on Silicon (Ishikawa) Chair: Ryota Kasai (NTT) TEL: +81-462-40-2170; FAX: +81-462-40-2107; E-Mail: kasai@aecl.ntt.co.jp.

— Hiroshi Iwai, Editor

Report *(continued from page 2)*

The literature on device reliability physics is scattered in many archival publications and conference digests. Even worse, a lot of good work just doesn't get published because the thrust of the material is device reliability physics and only partly aligned with one particular field. Because much of the work in reliability physics crosses the boundaries between disciplines, it can be just as easily excluded as included. This poses a major problem for those seeking to publish their work in the right forum. This dilemma can result in a decision not to publish, or a rejection because the material was not quite to the point for the selected publication. Discussions with many in the field, and surveys at IRPS have indicated a need for an archival publication for device reliability physics. The objective would be to provide an on line, paperless, web based, searchable, publication that was peer reviewed; in other words, a transaction class publication. The vision is that of an entire process, from receipt of the paper to its final publication, on the web. One goal is to provide this service free to members of societies sponsoring the publication, and eventually allow access to the material for anyone working in the field. How this latter goal

can be achieved has yet to be determined, with thoughts as diverse as industrial sponsors or advertising are under consideration. Affiliation and sponsorship with societies outside the IEEE is another goal. Present thoughts are to call the publication " Transactions on the Reliability of Electron-

ic Materials and Devices." We hope to work out the details in the coming months and have the premier issue on the web by 3/31/01

Lucian A. Kasprzak
Direct Radiology Corporation
Newark, DE

Announcement and Call for Nominations for the EDS Chapter of the Year Award

The award is given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st - June 30th period. Nominations for the award can only be made by the EDS Chapter Partners.

The winning chapter receives a certificate and check for \$1,000.00 to be presented at the International Electron Devices Meeting (IEDM).

The schedule for the award process is as follows:

Action

Call for Nominations e-mailed to Chapter Partners	6/1/99
Deadline for Nominations from Partners	9/1/99
Regions/Chapters Committee Selects Winner	Mid-October
Award given to Chapter Representative (at IEDM)	First week of December

Date

6/1/99
9/1/99
Mid-October
First week of December

EDS Meetings Calendar

(As of 20 May 1999)

The complete Calendar can be found at our web site: <http://www.ieee.org/organizations/society/eds/edscal.html>. Please visit!

1999 Meetings

July 4 - 7, 1999 T **EUROPEAN CONFERENCE ON HIGH TEMPERATURE ELECTRONICS**, Location: Westin Grand Hotel, Berlin Germany, Contact: Richard Sharp, Tel: 44-1-1235-463407, Fax: 44-0-1235-464253, E-Mail: richard.sharp@aeat.co.uk, Deadline: Not Available, www: Not Available

July 4 - 8, 1999, T **INTERNATIONAL MULTI-CONFERENCE ON CIRCUITS, SYSTEMS, COMMUNICATIONS AND COMPUTERS**, Location: Conference Center of the Hellenic Telecommunications Company, Athens, Greece, Contact: Nikos E. Mastorakis, Tel: 301-777-5660, Fax: 301-777-5660, E-Mail: mastor@ieee.org, Deadline: Past Due, www: <http://www.softlab.ece.ntua.gr/~mastor/CSCC9.htm>

July 5 - 9, 1999, T **INTERNATIONAL CONFERENCE ON NITRIDE SEMICONDUCTORS**, Location: Palace of Congress, Montpellier, France, Contact: Dr. Bernard Gil, Tel: 33-4-67-14-39-24, Fax: 33-4-67-14-37-60, E-Mail: gil@ges.univ-montp2.fr, Deadline: Past Due, www: <http://bilbot.ges.univ-montp2.fr/icns3.htm>

July 5 - 9, 1999, T **IEEE INTERNATIONAL SYMPOSIUM ON THE PHYSICAL & FAILURE ANALYSIS OF INTEGRATED CIRCUITS**, Location: Orchard Hotel, Singapore, Contact: M.K. Radhakrishnan, Tel: (65) 770-5439, Fax: (65) 774-5747, E-Mail: radha@ime.org.sg, Deadline: Past Due, www: <http://cicfar.ee.nus.sg/ipfa/ipfa99.html>

July 6 - 8, 1999, T **INTERNATIONAL MICRO-PROCESS AND NANOTECHNOLOGY CONFERENCE**, Location: Yokohama-shi Ginou Bunka Kaikan, Yokohama-shi, Kanagawa, Japan, Contact: Hiroaki Masuko, Tel: 81-3-5814-5800, Fax: 81-3-5814-5823, E-Mail: confg5@bcasj.or.jp, Deadline: Past Due, www: <http://www.nano.ee.es.osaka-u.ac.jp/mnc/>

July 6 - 9, 1999, @ **IEEE INTERNATIONAL VACUUM MICROELECTRONICS CONFERENCE**, Location: Congress Hall Darmstadt, Darmstadt, Germany, Contact: Hans W.P. Koops, Tel: 49-6151-83-2368, Fax: 49-6151-83-8188, E-Mail: ivmc99@hrzpub.tu-darmstadt.de, Deadline: Past Due, www: <http://www.hf.e-technik.tu-darmstadt.de/ivmc99/index.html>

July 11 - 15, 1999, T **INTERNATIONAL CONFERENCE ON UNSOLVED PROBLEMS OF NOISE**, Location: University of Adelaide, North Terrace, Adelaide, Australia, Contact: Derek Abbott, Tel: 618-8303-5748, Fax: 618-8303-4360, E-Mail: dabbott@eleceng.adelaide.edu.au, Deadline: Past Due, www: <http://www.eleceng.adelaide.edu.au/Personal/dabbott/UpoN/uponhome.html>

August 2 - 5, 1999, @ **INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: Hotel Vancouver, Vancouver, British Columbia, Canada, Contact: Karen E. Thomson, Tel: (724) 772-7120, Fax: (724) 776-1830, E-Mail: kthomson@sae.org, Deadline: Past Due, www: <http://www.sae.org/CALENDAR/iec99cfp.htm>

August 16 - 17, 1999, T **INTERNATIONAL SYMPOSIUM ON LOW POWER ELECTRONICS AND DESIGN**, Location: Hyatt Islandia on San Diego's Mission Bay, San Diego, CA, Contact: Farid N. Najm, Tel: (217) 333-7678, Fax: (217) 244-1946, E-Mail: najm@uiuc.edu, Deadline: Past Due, www: <http://www.ee.ucla.edu/islped99>

August 22 - 26, 1999, @ **IEEE INTERNATIONAL SYMPOSIUM ON COMPOUND SEMICONDUCTORS**, Location: Zeiss Planetarium, Berlin, Germany, Contact: ISCS '99 Secretary, Tel: 49-30-20377-352, Fax: 49-30-20377-201, E-Mail: ISCS99@pdi-berlin.de, Deadline: Past Due, www: <http://www.pdi-berlin.de/iscs/>

August 23 - 26, 1999, T **INTERNATIONAL CONFERENCE ON NOISE IN PHYSICAL SYSTEMS & 1/F FLUCTUATIONS**, Location: Hong Kong Polytechnic University, Hong Kong, Contact: Charles Surya, Tel: 81-2766-6220, Fax: 81-2362-8439, E-Mail: ensurya@en.polyu.edu.hk, Deadline: Past Due, www: http://www.ee.ust.hk/ieee_eds/icnf

September 6 - 8, 1999, @ **IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMICONDUCTOR PROCESSES AND DEVICES**, Location: Kyoto Research Park, Kyoto, Japan, Contact: Secretariat, c/o Business Center for Academic Societies Japan, Tel: 81-3-5814-5800, Fax: 81-3-5814-5823, E-Mail: confg5@bcasj.or.jp, Deadline: Past Due, www: <http://www-e7.ele.eng.osaka-u.ac.jp/SISPAD/>

September 8 - 10, 1999, * **IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE AND WORKSHOP**, Location: The Fairmont Copley Plaza, Boston, MA, Contact: Margaret M. Kindling, Tel: (202) 289-0440, Fax: (202) 289-0441, E-Mail: mkindling@semi.org, Deadline: Past Due, www: Not Available

September 13 - 15, 1999, T **EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE**, Location: City Campus of the Katholieke Universiteit, Leuven, Belgium, Contact: Herbert Gruenbacher, Tel: 43-4242-2004-120, Fax: 43-4242-2004-179, E-Mail: hg@cti.ac.at, Deadline: Past Due, www: <http://www.essderc.org>

September 13 - 16, 1999, T **INTERNATIONAL CRIMEAN MICROWAVE CONFERENCE**, Location: Sevastopol State Technical University, Crimea, Ukraine, Contact: Dr. Pavel P. Yermolov, Tel: 38-0692-42-42-87, Fax: 38-0692-444-768, E-Mail: micoc@bios.iuf.net, Deadline: 7/1/99, www: Not Available

September 13 - 17, 1999, T **INTERNATIONAL CONFERENCE ON ELECTROMAGNETICS IN ADVANCED APPLICATIONS**, Location: Torino Incontra Congress Center, Torino, Italy, Contact: P.L.E. Uslenghi, Tel: (312) 996-6059, Fax: (312) 413-0024, E-Mail: uslenghi@eecs.uic.edu, Deadline: Past Due, www: <http://www.polito.it/iceaa99>

September 17, 1999, T **HIGH FREQUENCY POSTGRADUATE STUDENT COLLOQUIUM**, Location: University of Leeds, Leeds, UK, Contact: Stravros Iezekiel, Tel: 44 (0) 113-233-2000, Fax: 44 (0) 113-233-2032, E-Mail: s.izekeil@ieee.org,

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

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

Deadline: 7/9/99, [www: http://www.ee.leeds.ac.uk/staff/si/pgc99.html](http://www.ee.leeds.ac.uk/staff/si/pgc99.html)

September 19 - 22, 1999, * **INTERNATIONAL CONFERENCE ON MICROELECTRONICS (MIEL)**, [Location](#): University of Nis, Nis, Yugoslavia, [Contact](#): Aneta Trajkovic, [Tel](#): 381-18-529-326, [Fax](#): 381-18-46-180, [E-Mail](#): miel@unitop.elfak.ni.ac.yu, [Deadline](#): Past Due, [www](#): <http://unitop.elfak.ni.ac.yu/miel/welcome.html>

September 20 - 23, 1999, T **INTERNATIONAL SEMINAR/WORKSHOP ON DIRECT AND INVERSE PROBLEMS OF ELECTRO-MAGNETIC AND ACOUSTIC WAVE THEORY**, [Location](#): Institute for Applied Problems of Mechanics and Mathematics of NASU, Lviv, Ukraine, [Contact](#): Mykhailo I. Andriyuk, [Tel](#): 38-0322-651944, [Fax](#): 38-0322-637088, [E-Mail](#): andz@iapmm.lviv.ua, [Deadline](#): Past Due, [www](#): <http://www.ewh.ieee.org/soc/cpmt/ukraine/>

September 20 - 24, 1999, # **INTERNATIONAL PHOTOVOLTAIC SCIENCE & ENGINEERING CONFERENCE**, [Location](#): Royton Sapporo, Sapporo, Hokkaido, Japan, [Contact](#): Toshiyuki Sameshima, [Tel](#): 81-423-88-7109, [Fax](#): 81-423-85-9055, [E-Mail](#): tsamesin@cc.tuat.ac.jp, [Deadline](#): Past Due, [www](#): Not Available

September 21 - 23, 1999, T **HIGH POWER MICROWAVE ELECTRONICS: MEASUREMENTS, IDENTIFICATIONS, APPLICATIONS CONFERENCE**, [Location](#): Novosibirsk State Technical University, Novosibirsk, Russia, [Contact](#): Vasily Snouritsin, [Tel](#): 7-3832-462598, [Fax](#): 7-3832-462598, [E-Mail](#): crra@ref.nstu.ru, [Deadline](#): Past Due, [www](#): <http://www.nstu.ru/miame99>

September 21 - 24, 1999, T **INTERNATIONAL CONFERENCE ON SOLID-STATE DEVICES AND MATERIALS**, [Location](#): Nihon Toshi Center, Kaikan, Tokyo, Japan, [Contact](#): Yoshimasa Miyamoto, [Tel](#): 81-3-5814-5800, [Fax](#): 81-3-5814-5823, [E-Mail](#): ssdm@bcasj.or.jp, [Deadline](#): Past Due, [www](#): <http://ssdm.bcasj.or.jp/>

September 26 - 28, 1999, * **IEEE BIPOLAR/Bi-CMOS CIRCUITS AND TECHNOLOGY MEETING**, [Location](#): Marriott City Center Hotel, Minneapolis, MN, [Contact](#): Janice V. Jopke, [Tel](#): (612) 934-5082, [Fax](#): (612) 934-6741, [E-Mail](#): jjopke@aol.com, [Deadline](#): Past Due, [www](#): <http://www.snf.stanford.edu/Conferences/BCTM/>

September 27 - 30, 1999, T **ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE SYMPOSIUM**, [Location](#): Buena Vista Palace, Orlando, FL, [Contact](#): ESD Association, [Tel](#): (315) 339-6937,

[Fax](#): (315) 339-6793, [E-Mail](#): eosed@aol.com, [Deadline](#): Past Due, [www](#): <http://www.eosed.org>

October 4 - 7, 1999, * **IEEE INTERNATIONAL SOI CONFERENCE**, [Location](#): Sonoma DoubletreeHotel, Rohnert Park, CA, [Contact](#): Bobbi Armbruster, [Tel](#): (310) 305-7885, [Fax](#): (310)305-1038, [E-Mail](#): bacm@mediaone.net, [Deadline](#): Past Due, [www](#): <http://www.drcsdca.com/~soiconf/>

October 5 - 8, 1999, T **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS**, [Location](#): Palatium-Arcachon, Bordeaux, France, [Contact](#): Nathalie Labat, [Tel](#): 33-(0)5-56-84-65-45, [Fax](#): 33-(0)5-56-37-15-45, [E-Mail](#): esref@ixl.u-bordeaux.fr, [Deadline](#): Past Due, [www](#): Not Available

October 5 - 9, 1999, * **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, [Location](#): Sinaia Hotel, Sinaia, Romania, [Contact](#): Doina Vancu, [Tel](#): 40-1-230-14-48, [Fax](#): 40-1-411-46-61, [E-Mail](#): cas@imt.ro, [Deadline](#): Past Due, [www](#): <http://www.imt.ro/CAS>

October 10 - 13, 1999, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER DESIGN: VLSI IN COMPUTERS & PROCESSORS**, [Location](#): Austin Marriott at the Capitol, Austin, TX, [Contact](#): Andreas Kuehlmann, [Tel](#): (914) 945-3458, [Fax](#): (914) 945-4469, [E-Mail](#): kuehl@watson.ibm.com, [Deadline](#): Not Available, [www](#): Not Available

October 11 - 13, 1999, @ **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, [Location](#): Santa Clara Marriott, Santa Clara, CA, [Contact](#): Suzanne Harkless, [Tel](#): (510) 284-4040 ext. 237, [Fax](#): (510) 284-4161, [E-Mail](#): suzanne@meetingsplus.com, [Deadline](#): Past Due, [www](#): <http://www.issm.com>

October 17, 1999, T **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, [Location](#): Monterey Conference Center, Monterey, CA, [Contact](#): Tony Immorlica, [Tel](#): (603) 885-1100, [Fax](#): (603) 885-1074, [E-Mail](#): anthony.a.immorlica@lmco.com, [Deadline](#): Not Available, [www](#): Not Available

October 17 - 20, 1999, * **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, [Location](#): Doubletree Hotel, Fisherman's Wharf, Monterey, CA, [Contact](#): Brad Nelson, [Tel](#): (650) 852-6843, [Fax](#): (650) 852-7128, [E-Mail](#): nelson.brad@ssd.loral.com, [Deadline](#): Past Due, [www](#): <http://www.gaasic.org>

October 18 - 20, 1999, T **INTERNATIONAL SYMPOSIUM ON ULSI PROCESS INTE-**

GRATION, [Location](#): Hilton Hawaiian Village, Honolulu, Hawaii, [Contact](#): Hiroshi Iwai, [Tel](#): 81-44-549-2335, [Fax](#): 81-44-549-2291, [E-Mail](#): h.iwai@ieee.org, [Deadline](#): Past Due, [www](#): <http://www.electrochem.org/meetings/196/symp>

October 18 - 21, 1999, * **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, [Location](#): Stanford Sierra Camp, South Lake Tahoe, CA, [Contact](#): Linda Head, [Tel](#): (609) 256-5335, [Fax](#): (609) 256-4950, [E-Mail](#): head@rowan.edu, [Deadline](#): 7/2/99, [www](#): <http://www.irps.org/rw/>

October 25 - 29, 1999, T **MANUFACTURING SCIENCE AND TECHNOLOGY GROUP PROGRAM**, [Location](#): Washington State Convention Center, Seattle, Washington, [Contact](#): Frederick H. Dill, [Tel](#): (914) 945-3332, [Fax](#): (914) 945-4520, [E-Mail](#): f.dill@ieee.org, [Deadline](#): Not Available, [www](#): Not Available

October 26 - 27, 1999, T **INTERNATIONAL CONFERENCE ON VLSI & CAD**, [Location](#): Hotel Inter-Continental, Seoul, Korea, [Contact](#): ICVC Secretariat, [Tel](#): 82-2-551-3404, [Fax](#): 82-2-551-3406, [E-Mail](#): ychoi@semi.org, [Deadline](#): Past Due, [www](#): Not Available

October 27 - 29, 1999, T **INTERNATIONAL SYMPOSIUM ON MICROELECTRONICS AND MICROELECTROMECHANICAL SYSTEMS**, [Location](#): Royal Pines Resort, Gold Coast, Queensland, Australia, [Contact](#): Cherie Morris, [Tel](#): 61-2-9929-0099, [Fax](#): 61-2-9929-0587, [E-Mail](#): ireesoc@ozemail.com.au, [Deadline](#): Past Due, [www](#): <http://www.spie.org/web/meetings/calls/au99/au99.home.html>

November 3, 1999, T **IEEE ELECTRON DEVICES ACTIVITIES IN WESTERN NEW YORK CONFERENCE**, [Location](#): Center for Integrated Manufacturing Studies (CIMS), Rochester Institute of Technology, Rochester, NY, [Contact](#): Karl Hirschman, [Tel](#): (716) 475-5130, [Fax](#): (716) 475-5041, [E-Mail](#): kdhemc@rit.edu, [Deadline](#): 9/30/99, [www](#): Not Available

November 7 - 11, 1999, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER-AIDED DESIGN**, [Location](#): DoubleTree Hotel, San Jose, CA, [Contact](#): Debbie Giallombardo, [Tel](#): (303) 530-4562, [Fax](#): (303) 530-4334, [E-Mail](#): debbie@mpassociates.com, [Deadline](#): Past Due, [www](#): <http://www.iccad.com>

November 22 - 24, 1999, T **INTERNATIONAL CONFERENCE ON MICROELECTRONICS (ICM)**, [Location](#): Le Meridian Hotel, Kuwait City, Kuwait, [Contact](#): M.I. Elmasry, [Tel](#): (519) 888-

4567 ext. 3753, Fax: (519) 746-5195, E-Mail: elmasry@vlsi.uwaterloo.ca, Deadline: Past Due, www: <http://139.141.2.41:8080/icm/icm.html>

November 22 - 23, 1999, T **WORKSHOP ON HIGH PERFORMANCE ELECTRON DEVICES FOR MICROWAVE AND OPTOELECTRONIC APPLICATIONS**, Location: King's College, University of London, London, Contact: Ali Rezazadeh, Tel: 44-0-171-873-2879 Fax: 44-0-171-873-2879 E-Mail: ali.rezazadeh@kcl.ac.uk, Deadline: None, www: <http://www.eee.kcl.ac.uk/~prg/COE/edmo99.html>

December 1 - 3, 1999, T **INTERNATIONAL SEMICONDUCTOR DEVICE RESEARCH SYMPOSIUM**, Location: Omni Hotel, Charlottesville, VA, Contact: Holly Claudia Slade, Device Parametric Group, Technology Transfer Dept., WhiteOak Semiconductor, 6000 Technology Blvd. Sandston, VA 23150, Tel: (804) 952-7342, E-Mail: sladeh@whiteoaksemi.com, Deadline: Not Available, www: Not Available

December 2 - 4, 1999, * **IEEE SEMICONDUCTOR INTERFACE SPECIALISTS CONFERENCE**, Location: Mills House Hotel, Charleston, SC, Contact: Kathleen S. Krisch, Tel: (908) 582-2432, Fax: (908) 582-2445, E-Mail: krisch@lucent.com, Deadline: 8/9/99, www: Not Available

December 6 - 8, 1999, * **IEEE INTERNATIONAL ELECTRON DEVICES MEETING**, Location: Washington Hilton & Towers Hotel, Washington D.C., Contact: Phyllis Mahoney, Tel: (301) 527-0900, Fax: (301) 527-0994, E-Mail: pwmahoney@aol.com, Deadline: Past Due, www: <http://www.ieee.org/conference/iedm>

December 14 - 18, 1999, T **INTERNATIONAL WORKSHOP ON PHYSICS OF SEMICONDUCTOR DEVICES**, Location: Solid State Physics Laboratory, IIT, Delhi, India, Contact: SK Agarwal, India, Tel: (11) 291-5144, Fax: (11) 291-3609, E-Mail: ska@drsspl.ren.nic.in, Deadline: Past Due, www: <http://httpserver.iitd.ernet.in/xiwpsd/>

2000 Meetings

February 7 - 9, 2000, **INTERNATIONAL SOLID-STATE CIRCUITS CONFERENCE**, Location: San Francisco Marriott Hotel, San Francisco, CA, Contact: Nicole Rath, Courtesy Associates, 2000 L Street, N.W., Suite 710, Washington, DC 20036, Tel: (202) 973-8667, Fax: (202) 973-8722, E-Mail: ISSCC@courtesyassoc.com, Deadline: 9/10/99, www: <http://www.isscc.org>

February 13 - 17, 2000, * **INTERNATIONAL CONFERENCE ON NON-VOLATILE SEMICONDUCTOR**

TOR MEMORY WORKSHOP, Location: Hyatt Regency, Monterey, CA, Contact: Michael Fliesler, NVD Design Engrg., AMD, Inc., Tel: (408) 749-5561, Fax: (408) 749-3718, E-Mail: michael.fliesler@amd.com, Deadline: 10/22/99, www: <http://www.hea.com/hean2/flash/17aillst.htm>

March 13 - 16, 2000, * **INTERNATIONAL CONFERENCE ON MICROELECTRONIC TEST STRUCTURES**, Location: DoubleTree Hotel, Monterey, CA, Contact: Wendy Walker, ICMTS 2000 Conference Secretariat, 101 Lakeforest Blvd., Suite 400-B, Gaithersburg, MD 20877, Tel: (301) 527-0900 ext. 315, Fax: (301) 527-0994, E-Mail: wendyw@widerkehr.com, Deadline: 8/20/99, www: <http://www.ee.ed.ac.uk/ICMTS>

March 15 - 17, 2000, T **INTERNATIONAL CARACAS CONFERENCE ON DEVICES, CIRCUITS AND SYSTEMS**, Location: Cancun, Mexico, Contact: Francisco J. Garcia Sanchez, Laboratorio de Electronica del Estado Solido, Apartado Postal 89000, Caracas 1080A, Venezuela, Tel: 58-2-9064010, Fax: 58-2-9064025, E-Mail: fgarcia@ieee.org, Deadline: 7/2/99, www: <http://pancho.labc.usb.ve/iccdcs2000>

March 27 - 29, 2000 T **INTERNATIONAL CONFERENCE ON MODELING & SIMULATION OF MICROSYSTEMS, SEMICONDUCTORS, SENSORS AND ACTUATORS**, Location: U.S. Grant Hotel, San Diego, CA, Contact: Sarah Wenning, 4847 Hopyard Road, Suite 4-381, Pleasanton, CA 94588, Tel: (925) 847-9152, Fax: (925) 847-9153, E-Mail: wenning@dnai.com, Deadline: 10/15/99, www: <http://www.cr.org/MSM2000/>

April 2000, T **TRANS BLACK SEA REGION SYMPOSIUM ON APPLIED ELECTROMAGNETICS**, Location: Tirnovo, Bulgaria, Contact: Nikolaos K. Uzunoglu, National Technical University of Athens, Dept. of Electrical & Computer Engineering, Division of Electroscience, Iroon Polytechniou 9, Zografos 15773, Athens, Greece, Tel: 30-1-7723556, Fax: 30-1-7723557, E-Mail: nuzu@cc.ece.ntua.gr, Deadline: Not Available, www: Not Available

April 10 - 13, 2000, * **INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM**, Location: Fairmont Hotel, San Jose, CA, Contact: Jon Klema, 3311 County Road 268, Leander, TX 78641, Tel: (512) 933-6428, Fax: (512) 933-7662, E-Mail: rdpm70@email.sps.mot.com, Deadline: 9/10/99, www: <http://www.irps.org>

May 2000, @ **INTERNATIONAL CONFERENCE ON VACUUM ELECTRONICS**, Location: Monterey, CA, Contact: James A. Dayton, Jr., Hughes Electron Dynamics Division, 3100 West Lomita

Bld., Torrance, CA 90509-2999, Tel: (310) 517-5395, Fax: (310) 517-6873, E-Mail: jadayton@mail.hac.com, Deadline: Not Available, www: Not Available

May 14 - 18, 2000 @ **INTERNATIONAL CONFERENCE ON INDIUM PHOSPHIDE AND RELATED MATERIALS**, Location: Williamsburg Marriott, Williamsburg, VA, Contact: Samantha Padilla, IEEE/LEOS, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, Tel: (732) 562-3894, Fax: (732) 562-8434, E-Mail: s.padilla@ieee.org, Deadline: Not Available, www: <http://www.ieee.org/leos>

May 21 - 24, 2000 T **CUSTOM INTEGRATED CIRCUITS CONFERENCE**, Location: Caribe Royale, Lake Buena Vista, FL, Contact: Melissa Widerkehr, Widerkehr & Associates, 101 Lakeforest Blvd., Gaithersburg, MD 20877, Tel: (301) 527-0900, Fax: (301) 527-0994, E-Mail: iccc@his.com, Deadline: 12/1/99, www: Not Available

May 22 - 24, 2000, T **INTERNATIONAL SYMPOSIUM ON PLASMA PROCESS INDUCED DAMAGE**, Location: Westin Hotel, Santa Clara, CA, Contact: Della Miller, NCCAVS, 1265 El Camino Real, Suite 109, Santa Clara, CA, Tel: (408) 246-3600, Fax: Not Available, E-Mail: della@technicalmarketing.com, Deadline: Not Available, www: Not Available

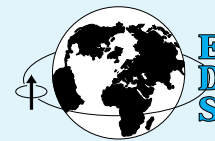
May 22 - 25, 2000, @ **INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES & ICS**, Location: Toulouse, France, Contact: M. Ayman Shibib, Lucent Technologies, Bell Labs, 2525 N. 12th Street, P.O. Box 13396, Reading, PA 19612-3396, Tel: (610) 939-6576, Fax: (610) 939-3769, E-Mail: a.shibib@ieee.org, Deadline: 10/15/99, www: <http://www.laas.fr/ISPSD2000/>

May 30 - June 2, 2000, T **ELECTROMAGNETICS CONFERENCE (EUROEM)**, Location: Edinburgh International Conference Centre, Edinburgh, Scotland, Contact: Concorde Services, Ltd, Suite 325, Pentagon Business Centre, Washington Street, Glasgow G3 8AZ, Scotland, UK, Tel: 44-141-221-5411, Fax: 44-141-221-2411, E-Mail: euroem@concorde-uk.com, Deadline: 1/14/00, www: <http://www.mcs.dundee.ac.uk:8080/~euroem>

June 10, 2000, @ **INTERNATIONAL WORKSHOP ON STATISTICAL METROLOGY**, Location: Hilton Hawaiian Village, Honolulu, HI, Contact: Phyllis Mahoney, 101 Lakeforest Blvd., Suite 400-B, Gaithersburg, MD 20877, Tel: (301) 527-0900 ext. 103, Fax: (301) 527-0994, E-Mail: phyllism@widerkehr.com, Deadline: Not Available, www: Not Available



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