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

IEEE Electron Devices Society Newsletter

2000 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM)



Minneapolis Convention Center

The 2000 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM) will be held in Minneapolis, Minnesota from September 24 to September 26, 2000. 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, an evening panel session, several invited papers, a vendor exhibition, and a best student paper award.

The conference starts off with a Short Course on Sunday, September 24th. The course is divided into three sessions, each two hours in length. The first session will address the design, modeling and fabrication of on-chip RF/microwave passives. The second session will discuss the optimization and design of advanced epitaxial SiGe HBT structures. The final session will focus on the reliability and failure mechanisms in technologies intended for high frequency RF and high speed digital applications. These sessions are taught by practicing experts working at the leading edge of their field.

On Monday morning, the 2000 BCTM keynote speech will be given by Professor M. Rodwell from UC Santa Barbara. Dr. Rodwell will discuss present efforts in building high speed HBTs and design issues which become critical as clock rates progress to 100 GHz. There will be a panel session on Monday evening titled "Role of Foundry for RF ICs: Will the IC design companies of the

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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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EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

2000	<u>2001</u>
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)	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 12/99 C. L. Claeys (1) J. A. Dayton, Jr. (1) M. Fukuma (1) K. M. Lau (1) K. Lee (1) M. L. Ostling (1) D. L. Pulfrey (1) K. Shenai (2)

*2002

Message From the Editor

Krishna Shenai



I am writing this message after a lapse of almost a year. It is sometimes astonishing to see how quickly the year has gone by. As professionals, all of us are very busy in our work. I am hoping that this issue comes to you at a very prosperous time in your career.

I would like to take this opportunity to thank a number of our outgoing Regional Editors for outstanding service to the Newsletter and the Electron Devices community. They are: Hiroshi Iwai (Region 10), Terry H. Oxley (Region 8), S. C. Sun (Region 10), Paul K. L. Yu (Region 6), and Mark H. Weichold (Regions 3, 5 & 9). Their outstanding voluntary contributions for many years are exemplary to the rest of us. Replacing them on the Newsletter Editorial Staff are: Hisayo Momose (Region 10), Gady Golan (Region 8), Tahui Wang (Region 10), Stephen Parke (Region 6), and Chuck Yarling (Regions 3 & 5), respectively. In addition, on popular demand from the Latin American membership of the society, we have decided to appoint an additional editor for Region 9 - Latin America. This necessity was created because of a large membership as well as the growing importance of the electron devices field in this region. I am pleased to note that Prof. Adelmo Ortiz-Conde has enthusiastically accepted this new position.

Once again, I thank all outgoing editors for their dedicated service to the Newsletter and welcome the new editors and wish them all success. Please contact your respective Regional Editor directly with news items.



Gady Golan

Dr. Gady Golan is a senior lecturer with tenure in the Department of Electrical and Electronics Engineering at the Technological Academic Institute - Holon and at The Open University of Israel. He also directs the Microelectronics and Thin Films Laboratory at the Holon Institute. Since 1997 he established three start-up companies: PTC heating elements, SiC heating ele-

ments, Electro-luminescent readout for smart-

Gady Golan

cards applications.

Dr. Golan has authored over 25 refereed articles and over 75 abstracts for conferences, as well as written two books: <u>Semicon-ductors</u> (1996) and <u>Semiconductor Devices and Microelectronics</u> (2000). Dr. Golan holds 5 patents on PTC heating elements. His current research is on neutron irradiated silicon diodes. He is a Senior Member of the IEEE and a Distinguished Lecturer of EDS.

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Upcoming Technical Meetings

BCTM (continued from page 1)

future have no wafer fabs?" Several exhibits by design, test/measurement, and CAD/modeling vendors will also be on display at the conference.

The conference technical sessions offer exceptional technical papers that provide the latest and most significant developments in Bipolar/BiCMOS integrated circuits. Presentations are given in the following areas: Analog/Digital Circuit Design, Radio Frequency Circuit Design, Device Physics, Modeling and Simulation, Process Technology, and Power Devices. The technical sessions are highlighted by invited and tutorial papers by leading experts from industry and academia.

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; Communications 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; Active Gyrators; 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 and HBT Models; Behavioral Modeling Techniques; Parameter Extraction Methodologies and Test Structures; RF and Thermal Simulation Techniques; Modeling of Passive Components, Interconnect and Packages; Statistical Modeling; and Device, Process and Circuit Simulation.

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/BiC-MOS 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 worldfamous 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 the IEEE Solid-State Circuits Society and the IEEE Twin Cities Section. The 2000 Conference Chair is Joachim Burghartz, DIMES, Delft University of Technology, The Netherlands. The Technical Program Chair is Kenneth O, University of Florida, Gainesville, FL. Interested parties can contact the BCTM conference manager: Janice Jopke, CCS Associates, 6611 Countryside Drive, Eden Prairie, MN 55346; TEL: (952) 934-5082; (952) 934-6741; E-MAIL: FAX: prairie66@uswest.net.

> Tom Skaar Lucent Technologies Bloomington, MN



2000 IEEE Photovoltaic Specialists Conference (PVSC)

It is my great pleasure to invite you to the 28th Photovoltaic Specialists Conference which is sponsored by the IEEE Electron Devices Society. This event will take place from September 15 to 22, 2000, at the Egan Convention Center and the Hilton Hotel in Anchorage, Alaska. Anchorage is easily accessible from anywhere in the world and it combines the best of outdoor adventure and modern amenities. Denali National Park with Mount McKinley, Portage Glacier, and Alaska Native Heritage Center all await you in Alaska. This conference is the premier international meeting in our field and is designed to showcase cutting edge research and accomplishments, review the current status and future plans, and enrich the educational experience in photovoltaics. The heart of the conference is the prestigious technical program scheduled from Tuesday through Friday. About 400 papers, including orals and posters, will be presented at this conference. To maintain an appropriate bal-

(continued on page 4)

PVSC (continued from page 3)

ance, the technical papers will cover both fundamental and applied research on the science and technology of photovoltaic materials, devices and systems. These papers will be listed in the preliminary program available in late June. Each presenter will submit a paper describing the results in detail. These papers will be available in a proceedings mailed to each attendee shortly after the conference. In addition, an archival CD-ROM set containing all the papers from previous Photovoltaic Specialists Conferences will be given to all the attendees at the conference.

The conference has a strong auxiliary program with activities and presentations designed to increase the awareness of PV. This program focuses on teaching the importance and potential of PV, primarily to non-specialists. It highlights applications such as integration of PV into building and includes a workshop on "PV in Alaska". Most of the auxiliary program activities will take place on Sunday and Monday. On Monday, new PV specialists entering the field, as well as seasoned professionals, will benefit from multiple tutorial sessions. Four different tutorials will be offered on highly relevant and diverse topics to enrich the educational experience in PV and broaden the perspective of PV specialists.

Sunday through Thursday a number of companies currently active in PV will exhibit their products and services in ballrooms conveniently located within the Egan Center. The industrial exhibit offers a unique opportunity to learn about the latest developments and market trends in PV. Be sure to stop by and visit with companies of interest to you and attend the receptions in the exhibit area on Monday, Tuesday and Wednesday evenings.

The organizing committee has arranged with the Holland America Cruise Lines to include a pre-conference cruise to Alaska. The cruise will leave Vancouver, British Columbia on September 10, 2000. Cruise the Inside Passage and arrive in Seward, Alaska with transfer to Anchorage in time for the conference on September 17, 2000. In addition, a number of optional tours and a companions program have been arranged for the attendees. All of the details for the cruise and tours are available on our web page at *http:// ieeepvsc.nrel.gov*. Please review this information and sign-up early before all the spots are taken. Another highlight of the conference will be a train trip along Turnagain Arm where you will have the opportunity to see Alaskan wildlife and spectacular scenery. Dinner will be served along the way.

The 28th IEEE PVSC is the first major PV Conference to be held in America in the new millennium. I am confident that this important event, combined with the breathtaking surroundings of Anchorage, will provide a major stimulus to the scientific and business sectors of PV. Don't miss this opportunity to share information with your colleagues and establish new and fruitful contacts.

> Ajeet Rohatgi Georgia Institute of Technology Atlanta, GA

2000 International Conference on Simulation of Semiconductor Processes and Devices (SISPAD)



Blake Island, Seattle

The 2000 International Conference on Simulation of Semiconductor Processes and Devices (SISPAD 2000) will be held on September 6-8, 2000 at the Sheraton Seattle Hotel and Towers in Seattle, Washington. The conference will be preceded by a one-day workshop entitled "Challenges in Advanced Electronic Device Simulation — A Workshop and Forum for Discussion", to be organized by Stanford University.

SISPAD provides an opportunity for the presentation and discussion of recent

advances in modeling and simulation of semiconductor devices, processes and equipment for both increased physical understanding and for applications to both design and manufacturing. The program consists of 20minute oral presentations, with ample time for questions and answers. In addition, a poster session is planned, which provides a less formal venue and allows more in-depth interaction with the authors. Paper topics may include:

• Device simulation, including models of VLSI device scaling limits, quantum effects, and novel devices

- Process simulation, including both continuum and atomistic approaches
- Equipment, topography and lithography simulation
- Interconnect modeling and algorithms
- Numerical methods and algorithms, including gridding and parallel computing
- Simulations of novel devices such as microsensors, microactuators, optoelec-

tronics devices, lasers and flat panel displays

- Technology CAD (TCAD) applications
 - Integration of process, device, and circuit simulations
 - The determination of model parameters and material properties
 - User interfaces and visualization
 - Benchmarking, calibration and verification of simulators

The SISPAD 2000 program will feature an expanded selection of invited speakers. The list of invited speakers includes:

- T. Hiramoto (University of Tokyo)
- K. Jones (University of Florida)
- M. Lundstrom (Purdue University)
- C. McAndrew (Motorola)
- M. Miura-Mattausch (Hiroshima University)
- J. Phillips (Cadence)
- T. de La Rubia (Lawrence Livermore National Laboratory)
- N. Strecker (Integrated Systems Engineering)

The SISPAD conference is a truly international conference. The conference site rotates between North America, Europe and Asia. The 1998 and 1999 SISPAD conferences were held in Leuven, Belgium and Kyoto, Japan, respectively. Submissions include a broad cross-section of industry, university and government sponsored work. By attending, you will have the opportunity to interact with the worldwide leaders in TCAD research and development. The conference organizers strive to maintain an intimate conference (typical attendance is 150-200 people) with plenty of opportunities for "hallway" discussions.

The SISPAD social venue will include a conference dinner at the Tillicum Village Restaurant and Northwest Coast Indian Cultural Center on Blake Island State Park. Conference attendees and their guests will board a chartered boat for a narrated harbor tour of Elliott Bay, where you might spot porpoises, sea lions, orca, or other marine life that inhabit Puget Sound. Dinner will feature traditionally prepared baked salmon, followed by a Northwest Coast native dance program.

Seattle is located in the beautiful northwest coast of the USA. Famous sites include the Space Needle, Pike Place Market, the shoreline/ferries and, of course, the ubiquitous coffee culture. Cultural attractions include several orchestras, the Pacific Northwest Ballet and the Seattle Opera. Outdoor enthusiasts will enjoy a wide variety of activities. National parks and monuments within Washington state include Mount Rainier National Park, North Cascades National Park, Olympic National Park - Hoh/Quinault Rain Forests and Mount St. Helens National Volcanic Monument. The rugged Pacific coast has many attractions, including the San Juan Islands, and Long Beach Peninsula: "the World's Longest Beach". Additional information can be obtained from the Washington State Tourist Web site: http://www.tourism .wa.gov.

For general information, please view our website at http://www-tcad.stanford .edu/sispad/index.html. For information about the one day workshop, please view the web page http://www-tcad.stanford .edu/tcad/CADES_workshop.html. If you require additional information on the conference or the one-day workshop, please contact the SISPAD 2000 Conference Manager, Ms. Fely Barrera, CISX 332, Stanford University, Stanford, CA, 94305-4075 USA; TEL: +1 650 723 1349; FAX: +1 650 725 7731; E-MAIL: fely@ gloworm.stanford.edu.

> John Faricelli Compaq Computer Corporation Shrewsbury, MA

2000 IEEE Cornell University Conference on High Performance Devices



Cornell University

The biennial IEEE Cornell University Conference on High Performance Devices will be held August 7-9, 2000 in Ithaca, New York. The conference will continue its tradition of highlighting a variety of important developments in semiconductor devices, processing techniques and highspeed applications. The venue for the conference is Cornell University campus; the culturally and historically rich Ivy League School located in Ithaca. Ithaca is located in the Finger Lakes region of central New York, an area known for its natural beauty, combination of urban and rural areas, and cultural and recreational opportunities. The entire area is easily accessible by air or bus, and is a drive of a half-day or less from most major cities in the Northeast.

The following four topical areas comprise the scope of the Conference and papers:

- Microwave and millimeter wave devices and circuits
- Optoelectronic devices and circuits
- Speculative materials, devices and circuits concepts
- Micro-electrical-mechanical system (MEMS)

Topics of interest within these areas include but are not restricted to:

- Novel materials technologies and devices
- Wide bandgap materials and devices
- High speed and microwave optoelectronics
- Light sources and detectors
 Si-based heterostructures

- Terahertz sources and detectors
- High speed measurement techniques
- Sb-based devices
- High power and high speed packaging
- Microwave MEMS technology
- Optical MEMS
- Speculative concepts
- Heterogeneous integration
- Microwave and millimeter wave transistors and integrated circuits
- Nanometer fabrication and self-assembly techniques

The seventeenth IEEE Cornell Conference has preserved its main focus in microwave and high-speed devices with a large contribution from academic organizations. This year the emphasis will be on wide band gap materials and devices.

The IEEE Electron Devices Society (EDS) is the sponsor of the conference, and the Microwave Theory and Techniques Society (MTTS) is providing technical co-sponsorship. For additional conference program and registration information, please view the conference web site at: http:// www.iiiv.cornell.edu/cc00/.

> Leda Lunardi AT&T Labs Red Bank, NJ

Society News

Message from the President

Cary Y. Yang



It is indeed my distinct privilege to serve as the president of the Electron Devices Society for the year 2000. As your first president for the new millennium, I invite all of you to join me in the celebration of the many exemplary accomplishments of my predecessors and EDS colleagues. I am taking this opportunity to highlight a few of these accomplishments in the past decade.

Under the leadership of Al MacRae (EDS President 1986-87), Craig Casey (EDS President 1988-89), and Lew Terman (EDS President 1990-91), our Executive Office was conceived and established at the IEEE Operations Center in Piscataway, New Jersey, with the appointment of Bill Van Der Vort as the Executive Director in August, 1990. This office has since grown to six full-time and two part-time staff members. The globalization efforts pioneered by Lew and Mike Adler (EDS President 1992-93), and championed by them and others, have resulted not only in growth in membership (12,977 as of 12/31/99) and chapters (100 as of 12/31/99), but most significantly, in increased representation from all Regions in EDS activities. And for the very first time, our AdCom meeting was held outside the U.S. in June 1999, in conjunction with the VLSI Symposia held in Kyoto, Japan.

The careful planning and successful execution for transporting all editorial operations of *Electron Device Letters* and *Transactions on Electron Devices* to our Executive Office constitute one of the most important initiatives undertaken in recent years. The leadership of Steve Hillenius as Publications Chair and the journals' Editors-in-Chiefs, together with the diligent support of Bill and his staff, have turned this challenge into an operational reality.

This very Newsletter was created as one of the new initiatives of Dexter Johnston (EDS President 1994-95), with the appointment of Krishna Shenai as the first Editor-in-Chief. Dexter also presided over the planning and production of the first EDS Membership Directory, the EDS Home Page and the annual EDS CD ROM Package, as well as championed our Society's participation in IEEE's On-Line Periodicals Program.

The popular Meeting Organizers Workshop was the brainchild of Bruce Griffing (EDS President 1998-99), and its format has been emulated by several IEEE Societies. Our technical committees were restructured under the leadership of Lou Parrillo (EDS President 1996-97) and through the tireless efforts of the Executive Office. Annual or biennial Chapters Meetings for each Region were started by Mike, myself, Paul Yu, and Hiroshi Iwai, again with the impeccable support of our staff.

I feel most fortunate to have the opportunity to shepherd the ongoing activities initiated by my predecessors. In my next report, I will describe the progress of new initiatives taken this year in the areas of membership, education, publications, and chapters. Meanwhile, I encourage all of you as EDS members to continue to take advantage of what the Society offers and to participate in its activities. And on behalf of all AdCom members and our staff, I encourage you to let us know from time to time how we can better serve our Society and its members.

> Cary Y. Yang Santa Clara University Santa Clara, CA

Announcement of Newly Elected AdCom Members

On 5 December 1999, 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 individuals elected.

I. OFFICERS

The following individuals were elected as officers for a one-year term beginning 1/1/2000:



CARY Y. YANG (President) received the B.S., M.S. and Ph.D. degrees in electrical engineering from the University of Pennsylvania in 1970, 1971, and 1975, respectively. After working in various research positions at M.I.T., Stanford, and NASA on electronic properties of surfaces and interfaces, he founded Surface Analytic Research, Inc. and directed sponsored research in surface science. In 1983 he joined Santa Clara University, where he founded the Microelectronics Laboratory and initiated research programs on silicon device reliability and silicon-based heterostructures. He is currently Professor of Electrical Engineering and Director of the Microelectronics Laboratory at Santa Clara.

Dr. Yang has been a consultant to many industry and government laboratories, and a visiting professor at the University of Tsukuba, the National University of Singapore, and the University of California, Berkeley. He is a Fellow of IEEE, and a member of the Materials Research Society. He served as the Regions/Chapters Chair and Vice President of the IEEE Electron Devices Society. He has been serving as an editor of the *IEEE Transactions on Electron Devices*, and has authored or co-authored over 100 journal and conference publications. He is also a co-editor of four conference proceedings on silicon carbide and related materials, and a co-author of a book on hot-carrier effects in MOS devices.



STEVEN J. HILLENIUS

(Vice President) is the head of the ULSI Technology Research department at Lucent Technologies, Bell laboratories. He received the Ph.D. degree from the Universi-

Steven J. Hillenius

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ty of Virginia in 1978, in physics. He was an Assistant Professor of physics at the University of Virginia from 1978 to 1981 where his research involved low temperature solid state physics. Since 1981 he has worked at Bell Laboratories. His contributions have been in the area of silicon technology device research. He holds 10 patents in this field and has over 60 published articles and chapters. He is a Fellow of the IEEE. He has been the Publications Chair of the EDS since 1991 and is an elected member of the EDS AdCom.



(Treasurer) was born in Hillsborough, North Carolina in 1960. She received her B.S.E.E. from North Carolina State University in 1981 and her M.S. and Ph.D. in E.E. from Cornell Uni-

APRIL S. BROWN

versity in 1984 and 1985, respectively. She has worked for HRL Laboratories in Malibu, CA as a Senior Scientist and has held positions at the Army Research Office and the University of Michigan. In 1994, she joined the Georgia Institute of Technology. She is now Associate Dean of the College of Engineering and Professor in the School of Electrical and Computer Engineering. Her area of research is compound semiconductor materials and devices. She is a Fellow of the IEEE and an Editor for the *Transactions on Electron*



Devices.

JOHN K. LOWELL

(Secretary) received the Ph.D. degree in Applied Physics from the University of London. He has held technical and managerial assignments for United Technologies, Northern Telecom,

John K. Lowell

Mostek, Texas Instruments, British Telecom/Dupont, AMD, Applied Materials, Oracle and most recently PDF Solutions. He has also been Professor at Texas Tech University and in the University of Texas system, and held Consulting Professorships at other universities in addition to being a Visiting Scholar at the NSF Center for the Synthesis, Growth and Characterization of Electronic Materials at the University of Texas at Austin. Dr. Lowell is a Senior Member of the IEEE, a Distinguished Lecturer of the EDS and has held AdCom-level positions previously within the LEO and CAS societies. For fifteen years, he was also the Associate Editor-in-Chief of the IEEE Division I Circuits & Devices Magazine, and was its Guest Editor twice.

II.ADCOM MEMBERS-AT-LARGE

A total of eight persons were elected to three-year terms (2000-2002) as membersat-large of the EDS AdCom. One of the eight persons was re-elected for a second term, while the other seven individuals were first-time electees. The backgrounds of the electees span a wide range of professional and technical interests.

A. SECOND TERM ELECTEE: KRISHNA SHENAI is a



professor in the Department of Electrical Engineering and Computer Science at the University of Illinois at Chicago (UIC), as well as directs the Power Electronics Research Laboratory and

Krishna Shenai

MicroSystems Research Center. He recently established an industry-sponsored Power Electronics Reliability Research Consortium at UIC which is dedicated to developing and advancing robust power converter technologies. Dr. Shenai has authored over 250 refereed articles in IEEE journals and conferences, written a book on VLSI Metallization, contributed to eight book chapters and holds 10 patents. His current research is on silicon and SiC power electronics and wireless technologies. He is a Senior Member of IEEE, Founding Editor-in-Chief of IEEE EDS Newsletter, Editor of IEEE Transactions on Electron Devices and a Distinguished Lecturer of EDS.

B. FIRST-TIME ELECTEES:



COR L. CLAEYS was born in 1951 in Antwerp, Belgium. He received the Electrical-Mechanical Engineering degree and the Ph.D. degree in Applied Science from the Katholieke Universiteit

Cor L. Claeys

Leuven (KU Leuven), Belgium, in 1974 and 1979, respectively. From 1974 through 1984 he was respectively research assistant then staff member of the ESAT Laboratory of the KU Leuven. In 1984, he joined IMEC as Head of Silicon Processing, responsible for process development and applications in charge coupled devices, silicon sensors, CMOS, non volatile memories, SOI-CMOS and BiCMOS. Since 1990, he is Head of the research group on Radiation Effects, Cryogenic Electronics and Noise Studies. He is also responsible for Technology Business Development. Furthermore, since 1990, he has been a Professor at the KU Leuven. His main interests are in silicon processing, device physics, low temperature electronics, radiation physics, submicron silicon technologies and defect engineering. In these fields he is author or co-author of more than 400 publications in scientific and technical journals, five book chapters and over 350 presentations at international conferences. He has been actively involved in the organization of international conferences and symposia. He is a Senior Member of IEEE, a member of the Electrochemical Society and a member of the Material Research Society. In 1999, he was elected as Academician and Professor of the International Information Academy. He is a reviewer for a variety of scientific journals, member of the Editorial Advisory Board of "Diffusion and Defect Data", Trans Tech Publications Ltd, Associate Editor of the Journal of Solid State Devices and Circuits, Sociedade Brasileiro de Microeletrínica, and also Associate Editor of Journal Electrochemical Society. He was the founder and is currently the chair of the IEEE ED Benelux Chapter. He is also ED Chapter coordinator for Region 8 and Chair of the IEEE Benelux Section.



James A. Dayton, Jr.

JAMES A. DAYTON,

JR., (M'60-SM'83-F'99) BSEE, Illinois Institute of Technology; MSEE U. of Iowa; Ph.D. EE, U. of Illinois. NASA Lewis Research Center in Cleveland, OH, 1967-1998: researcher and supervisor primarily in the area

of efficiency enhancement of traveling wave tubes with particular emphasis on computer modeling. Hughes Electron Dynamics in Torrance, CA, 1998-present: Director of Advanced Development and Technology, development of traveling wave tubes and amplifiers. Editor for Vacuum Devices for the *IEEE Transactions on Electron Devices* from 1994 to 1999. Chair, EDS Technical Committee on Vacuum Devices, 1997-present. General Chair, International Vacuum Electronics Conference, Monterey, CA, May 2000. EDS Distinguished Lecturer.

(continued on page 8)

AdCom Members

(continued from page 9)



MASAO FUKUMA received the B.E., M.E. and Ph.D. degrees in Instrumentation Engineering from Keio University, Yokohama, Japan in 1972, 1974 and 1986, respectively. In 1974, he joined NEC Central Res.

Masao Fukuma

Labs., where he worked on scaled down MOSFETs, TCAD and CMOS logic LSIs. Since 1999, he has been General Manager of Silicon Systems Res. Labs., NEC Corp., which is responsible for research and development on advanced silicon VLSIs including architecture, design, devices and processes. Dr. Fukuma has filled various professional committee posts such as the Chairman of VLSI Technology Symposium and the Editor of *IEEE Transactions on Electron Devices*.



KEI MAY LAU received the B.S. and M.S. degrees in physics from the University of Minnesota, Minneapolis, in 1976 and 1977 respectively, and the Ph.D. degree in Electrical Engineering from Rice University, Houston, Texas, in

Kei May Lau

1981. From 1980 to 1982, she was a Senior Engineer at M/A-COM Gallium Arsenide Products, Inc. In the Fall of 1982, she joined the Electrical and Computer Engineering Department at the University of Massachusetts/Amherst, where she is now a Professor. She initiated OMCVD, compound semiconductor materials and devices programs at UMass. Her research group has performed studies on strained heterostructures, high-frequency and photonic devices. Professor Lau spent her first sabbatical leave in 1989 at the MIT Lincoln Laboratory. She developed acoustic sensors at the DuPont Central Research Laboratory during her second sabbatical leave ('95-'96). She was a visiting professor at the Hong Kong University of Science and Technology for the fall of 1998.

Dr. Lau is a recipient of the NSF Faculty Awards for Women (FAW) Scientists and Engineers. She serves on the IEEE EDS AdCom, Electronic Materials Committee of the TMS Society of AIME, and is an editor of the IEEE Transactions on Electron Devices.



Kwyro Lee

KWYRO LEE received the B.S. Degree in Electronics Engineering from Seoul National University in 1976 and the M.S. and Ph.D. degrees from the University of Minnesota, Minneapolis in 1979 and 1983, respectively. After

graduation, he worked as an Engineering General Manager in GoldStar Semiconductor Inc. Korea, from 1983 to 1986. In 1987, he joined the Department of Electrical Engineering, KAIST, where he is now a Professor. He has been working as the Director of MICROS (Micro Information and Communication Remote-object Oriented Systems) Research Center since 1997. His research interests are focused on RF and baseband device and circuit technologies for mobile multimedia. He is a Senior Member of IEEE and a Life Member of IEEK.



received the MSc degree in engineering physics in 1980 and the doctor of technology degree in electronics in 1983, both from Uppsala University. In 1984, Ostling joined the faculty at the school of

MIKAEL L. OSTLING

Mikael L. Ostling

Electrical Engineering, Royal Inst of Technology (KTH), Stockholm, where he holds a position as professor and head of the device technology laboratory. Ostling is the director of the graduate student program in electronics at KTH since 1995. During 1993/94 he was a senior Fulbright visiting Scholar at the center for integrated systems (CIS), Stanford University, USA and in 1997 he spent 3 month as a visiting professor at the University of Florida, Gainesville, USA. His field of research is process and device technology for silicon and silicon carbide/wide bandgap materials in high frequency and high power applications. His research comprises more than 180 scientific papers, 3 book chapters and several invited talks. He serves regularly on several international conference committees, e.g. IEEE BCTM and ESSDERC. IEEE duties include being Chapter Chair for the ED Sweden Chapter and EDS Newsletter editor. Ostling is also a member of AVS, MRS and ECS.



DAVID L. PULFREY received the B.Sc. and Ph.D. degrees in electrical engineering from the University of Manchester, England in 1965 and 1968, respectively. Since 1968 he has been on the faculty in the Electrical

David L. Pulfrey

Engineering Department at the University of British Columbia, Vancouver, B.C., Canada; he was the inaugural winner of UBC's Teaching Prize for Engineering in 1990.

He is the author of "Photovoltaic Power Generation" (Van Nostrand Reinhold, 1979), and, with G. Tarr, "Introduction to Microelectronic Devices" (Prentice-Hall, 1989). His research area is semiconductor device modeling, presently with emphasis on compact models for high-performance HBTs. He has published over 100 papers on the topics of: electrical breakdown in thin dielectrics; the preparation and properties of plasma-anodized thin oxide films; the analysis and fabrication of Si MIS tunnel junction structures, GaAs-based HBTs, quantum-well lasers and GaN-based HBTs and photodetectors.

He was elected Fellow IEEE in 2000 for contributions to the modeling of heterojunction bipolar semiconductor devices.

> Bruce F. Griffing GE Corporation Schenectady, NY

Millennium Medals Awarded to EDS Members

As part of its celebration of the Third Millennium, the IEEE has awarded 3,000 IEEE Millennium Medals and certificates to individuals who have been selected by IEEE societies, regions, sections and major boards for outstanding contributions in their respective areas of activity. The number of awards allotted to each entity was based on size, allowing each society, region, section and major board to award a proportionate number. Not since the 1984 IEEE Centennial Medal has the IEEE given an Institutewide award to honor such a select and special group of members. Now the IEEE will mark the end of one millennium and the beginning of another with such an award.

World-renowned sculptor, Gladys Gunzer, created the medals. Her work includes the 1984 IEEE Centennial Medal and the 1980 Winter Olympics Medallions. The design will include a world map symbolizing the global nature of the IEEE and the words "In Celebration of the Third Millennium". Each award is customized with the recipient's name.

The Electron Devices Society was allotted 45 medals to be awarded to its members for outstanding contributions to the society and to the field of electron devices. The following EDS members were named winners of the Third Millennium Medal.

Willis A. Adcock Robert Adler Shojiro Asai Frank S. Barnes Dennis D. Buss H. Craig Casey M. George Craford Frederick H. Dill Jr. Lester F. Eastman Rudolf S. Engelbrecht Clifford E. Fay George Foyt James F. Gibbons Eugene I. Gordon Robert N. Hall James S. Harris Cyril Hilsum David A. Hodges Nick Holonyak Jr. James A. Hutchby Aleksandar B. Jaksic Renuka P. Jindal Lucian A. Kasprzak G. Ross Kilgore Stephen Knight Matt Kuhn Toivo M. Liimatainen Alan L. McWhorter James L. Merz Richard S. Muller Harvey C. Nathanson William J. Pietenpol James D. Plummer Robert H. Rediker Herbert J. Reich

Information on New Videos Offered by EDS

EDS has joined forces with the Reliability Society and IEEE Educational Activities in sponsoring two new video tutorials. These new tutorials are now available through IEEE Customer Service. Contact Customer Service by TEL: +1 880 678 IEEE (outside the USA and Canada, +1 732 981 0060); E-MAIL: *customer-service@ieee.org*, or via the web at http://www.ieee.org/ieeestore.

MEMS Performance & Reliability

Presented by Paul McWhorter, Samuel L. Miller, and William M. Miller; Sandia National Laboratories; technically edited by Tim Rost, Texas Instruments

This video tutorial focuses on silicon microelectromechanical systems (MEMS) performance and reliability. This video covers how to make valid performance and reliability measurements and their relationship to some specific design issues, addressing design, performance and reliability of MEMS together. It provides a brief overview of siliconbased technologies for those unfamiliar with the field. Both silicon actuators and sensors are addressed. Three professionals, along with a panel of experts, cover developments in this growing field. In the panel discussion, MEMS experts discuss the history and future of the challenges and opportunities in the MEMS area from industry, university and government perspectives. This set also includes a CD-ROM that contains four related IEEE conference proceeding excerpts, bibliography, and web links to related sites.

3 Hrs. / 3 VHS Tapes IEEE Member Price:\$650.00 US List Price: \$775.00 US NTSC Order No. HV7051-QVE PAL Order No. HV7052-QVE

Oxide Wearout, Breakdown & Reliability

Presented by David J. Dumin, Clemson University; technically edited by Tim Rost, Texas Instruments

In this video tutorial, David J. Dumin discusses how concepts involved in oxide wearout, breakdown and reliability have evolved over the past 35 years. He carefully and concisely organized this informative video since most engineers don't have sufficient time to peruse the literature and develop an understanding of how much good work has been done by others in this area. Where possible the simplest physical, mathIan Munro Ross Joseph E. Rowe John S. Saby John B. Singleton Earl L. Steele J. Earl Thomas, Jr. Clare G. Thornton Richard B.True Glen Wade Jerry M. Woodall

The medals and certificates will be presented to the awardees at a special EDS Luncheon on Sunday, 10 December at the San Francisco Hilton and Towers Hotel, San Francisco, CA USA in conjunction with the EDS AdCom meeting and the International Electron Devices Meeting (IEDM). For a complete listing of the Millennium Medal recipients, please visit the IEEE Awards Activities web page at http:// www.ieee.org/about/awards.

ematical, and engineering models are used to describe the processes taking place during the wearout/breakdown process. There is an emphasis on the early models, which still seem to be valid, and on the physical processes taking place inside the oxides as the oxides wearout and fail. This presentation includes extensive references to the literature with an emphasis on attempting to find the unifying physical and engineering principles that bind these different works together. This extensive bibliography points the viewer toward details that amplify the main points covered in the video. An examination for CEU credits is included in the set.

4.5 Hrs. / 3 VHS Tapes IEEE Member Price:\$650.00 US List Price: \$775.00 US NTSC Order No. HV7053-QVE PAL Order No. HV7054-QVE

> llesanmi Adesida University of Illinois Urbana, IL

EDS Chapter Subsidies For 2001

Requests for subsidies from EDS chapters are due on 1 August 2000. Last year, the EDS AdCom awarded funding to 54 chapters, with most amounts primarily ranging from US\$250 to US\$1,000. In April, 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 Administrative Committee Election Process

The Members-at-Large (MAL) of the EDS AdCom are elected for staggered threeyear terms, with a maximum of two consecutive terms. The 1993 Constitution and ByLaw changes mandated increasing the number of elected MALs from 18 to 22, and required that there be at least two members from both IEEE Region 8 (Europe, Mid. East & Africa) and Region 10 (Asia & Pacific). It also required that there be at least 1.5 candidates for each opening. From 1997 to 1999, seven, seven and eight positions were filled, respectively. In 2000, seven positions will be filled. The election procedure begins with the announcement and Call For Nominations in this Newsletter and *IEEE Electron Device Letters*. The slate of nominees is developed by the EDS Nominations Committee and includes the non-Committee and self-nominations received. Nominees are asked to submit a two-page biographical resume in a standard format. Nominations are closed around the end of October, and the biographical resumes are distributed to the 'full' voting members of AdCom prior to the AdCom meeting. Nominees are urged to attend the December AdCom meeting, and the election is held after the conclusion of the meeting.

A continuing flow of new AdCom members who are interested in working for the improvement of the Society and its related technical areas is key to the continued development of EDS and the field of electron devices. Those interested in the field, the Society, and its operations are encouraged to attend AdCom meetings, become involved in Society activities, and to consider running for election to AdCom.

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. Seven members will be elected this year for a term of three years, and a maximum of two consecutive terms is allowed. In 2000, the election will be held after the AdCom meeting on Sunday, December 10th. Electees begin their term in office on January 1, 2001.

Nominees are being sought to fill the slate of candidates. Nominees may be selfnominated, 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 20**, **2000**. 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, Bruce F. Griffing (see page 2 for contact information).

EDS Home Page Gets a Makeover



In September 1999, the EDS Website went public with its "new look". The revamped website was designed to make more EDS information easily accessible to its world-wide membership. Modeled after the IEEE Home Page, the site now utilizes IEEE web templates and graphics and follows the IEEE Web Publishing Guide. The new format also significantly eased the search for specific topics. From the EDS Home Page, http:// www.ieee.org/eds/, the EDS member can read the latest society news and find links to more specific information about the society, its Adcom and the various standing and technical committees. It also provides important links to IEEE services frequently utilized by the EDS constituency.

For example, with one click of your mouse on the links on the left-hand column, you can have before you everything you wanted to know about chapters, but didn't know where to look.

The EDS Home Page was originally created and maintained at Northeastern University by Lisa McIlrath. In June 1998, the site location and responsibility shifted to the EDS Executive Office in New Jersey, where Carrie Lin assumed the role of webmaster under Lisa's guidance. This allowed us to take advantage of the IEEE Web Support Services, which runs a weekly site analysis on HTML syntax errors, broken URLs, broken pages, missing titles, missing attributes, large files and image files. Carrie Lin of the EDS Executive Office coordinated our revamped site's design, page set-ups and links with the EDS staff and IEEE Information Technology.

Arlene Santos succeeded Lisa as new EDS Website Coordinator in January, 2000.

We value your feedback and suggestions. Please e-mail Arlene Santos (*a.a.santos@ieee.org*) or Carrie Lin (*c.lin@ ieee.org*).

> Arlene A. Santos National Semiconductor Corp. Ellicott City, MD

Announcement & Call for Nominations for the **Chapter of the Year Award**

The Chapter of the Year 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 either EDS AdCom voting members or self nomination by Chapter Chairs.

The winning chapter will receive 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 EDS Voting Members and Chapter Chairs Deadline for Nominations **Regions/Chapters Committee Selects Winner** Award given to Chapter Representative (at IEDM)

Date 6/1/00 9/15/00 Mid-October First week of December

In Memory of Dr. Prahalad K. Vasudev

Recently, EDS lost a valuable and wellrespected member with the untimely passing of Dr. Prahalad K. Vasudev. "PK", as he was known to most of us, was a pleasure to know and work with. I personally had the opportunity to work with him when he managed the high-energy implant and SOI advanced technology projects at SEMATECH in Austin, TX, and where he became widely known within the industrial and academic semiconductor research community. I later had the opportunity to serve with him on the 1996 IEDM Device Interconnect Committee. He became a prominent figure in the Austin semiconductor community where his influence was felt by many students and engineers outside the SEMATECH realm, and where he later became an active participant in the ED Central Texas Chapter. PK's principal device contributions were in the areas of SOI/SOS , phase shift masking, and more recently, Cu interconnects. He was involved in the management of several key SEMATECH projects and, for

some time, led the Advanced Technology Division. However, his enthusiasm and endless stream of interesting and innovative ideas indicated a knowledge that went well beyond these areas. For those who knew him well, it was an honor and privilege to know and work with him. As researcher, EDS member and friend, he will be sorely missed by his many colleagues and by the industry. A brief biography of Dr. Vasudev follows.

Prahalad K. Vasudev, was born in Jamshedpur, India, on April 2, 1950. He received his undergraduate degree in applied physics from the IIT-Kharagpur, India, in 1970 and masters and doctorate degrees in computer science and electrical engineering from Stanford in 1978. He worked for the past 25 years in the semiconductor industry in such positions as: Director of Mixed Signal Design at National Instruments, Director of Engineering and Chief Architect for Digital/Analog ASICs, at SEMATECH -Senior Fellow and Chief Technologist of Advanced Technologies, at Hughes Research Laboratories - Program Manager and Senior Scientist at the High Speed Microelectronics Department Hewlett Packard Laboratories. Prior to his death, he had joined LSI Logic as Director of Mixed Signal Design. Dr. Vasudev was a recipient of the following honors and awards: George Abraham Outstanding Paper Award at the 1996 Government Microelectronics and Systems Conference, Appointed SEMATECH Senior Fellow (1994), Fellow (1990) Fellow of the New York Academy of Sciences (1995), Appointed Co-Chair of the Device Interconnect Committee of IEDM (1996), Best Paper Award at The IEEE VLSI Technology Symposium (1988), Appointed Senior Scientist at Hughes Research Laboratories (1986), and Appointed IBM Fellow at Stanford University (1974).

> John K. Lowell PDF Solutions, Inc. Richardson, TX

Editors Message (continued from page $\tilde{2}$)



Hisayo Sasaki Momose

Hisayo Momose

Ms. Hisayo S. Momose has been engaged in the development of memory, logic and analog devices and in the research of small geometry CMOS and BiCMOS devices in Toshiba Corporation, Japan. Her major contributions were analysis of the hot-carrier reliability of CMOS and BiCMOS devices, many works of nitrided oxide gate CMOS and realization of 1.5 nm direct-tunneling gate oxide CMOS. She is now working on the research and development of CMOS analog devices for mobile telecommunication.

She has authored or co-authored more than 80 papers in technical journals and conferences. She has served as a technical program committee member for IRPS('92-'94), IEDM('97, '98) and ECS (Electrochemical Society) Symposium('99). She is a member of the IEEE, the Electrochemical Society and the Japan Society of Applied Physics.



Stephen Parke

Dr. Stephen A. Parke received the B.S. and M.S. degrees in electrical engineering from Purdue University in 1982 and 1984, respectively. In 1983, he was with the IBM

T.J. Watson Research

Center, Yorktown, NY. In 1984, he joined IBM Microelectronics in Burling-

(continued on page 19)



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

International Caracas Conference on Devices, Circuits, and Systems (ICCDCS 2000)

by Prof. F. G. Sanchez

On Friday, March 17th, members of the ICCDCS Steering Committee had a working meeting in Cancun with both ISTEC (Ibero-American Science and Technology Educational Consortium) and Motorola's SPS representatives, where both expressed their willingness to support, not only ICCD-CS 2002, but also the proposed IEEE Region 9 EDS/CAS Meeting or Workshop, which is to be held on odd years alternating with ICCDCS (2001, 2003, etc), and whose exact nature still remains to be precisely established. Until now, it has been decided that it will be trilingual (Spanish, English and Portuguese) and have a strong emphasis on workshops, tutorial courses and thematic invited talks. It will be directed specifcally, but not limited, to participants from LA and the Caribbean. As instructors and lecturers we intend to get world-class professionals from our supporting industries (such as Motorola and others) and from IEEE's roster of Distinguished Lectures. We have also decided that there will be a particular focus at each one of these events so as to address relevant technical issues of current interest in the region.

ISTEC already offered to help in procuring funds (from OAS, UNESCO, IDB, etc) to provide financial support to LA and the Caribbean participants who wish to attend to receive specialized training at the workshops and tutorial courses. We also will request support from the EDS and CAS Education Committees, as well as from the Region 9 governing body.

SBMicro2000 - International Conference on Microelectronics and Packaging

by Nelson Braga

The XV SBMicro - International Conference on Microelectronics and Packaging will be held at the Hotel Tropical in Manaus, the capital city of the Amazon State, Brazil, in the heart of the Rain Forest, September 18 - 23. This conference offers a unique blend of microelectronics and packaging and serves as a forum to gather scientists working on topics related to systems fabrication and integration. The multi-disciplinary nature of SBMicro conferences is intended to emphasize the interactions among processing and packaging technologies, devices, CAD and circuit design, through a variety of formats, such as oral presentations, poster sessions, exhibits, panel discussions and tutorial sessions. Since 1986, this conference has been sponsored by the Brazilian Microelectronics Society (SBMICRO), and co-sponsored by the International Microelectronics and Packaging (IMAPS) Society. In the same week and venue, the International Conference on Integrated Systems and Circuits - SBC-CI2000 will be held. The deadline for paper submissions is 04/28/2000. Please contact Nelson Braga for more information. TEL: (+5511) 818-5257; FAX: (+5511) 818-5585; E-MAIL: nbraga@lme.usp.br, URL: http://www.lme.usp.br/~sbm2000/.

Mark Weichold, Editor

Europe, Middle East & Africa (Region 8) Report on the International

Report on the International Workshop on the Inelastic Mean Free Path of Electrons, IMFP 2000. Budapest, January 27-29, 2000 by Gyorgy Gergely

The IMFP is a material parameter, defined by ASTM standards and applied by surface, and interface analysis in technology, research, development and failure hunting. It is used by AES (Auger spectroscopy and microscopy) and XPS, widely applied in microelectronics, semiconductor devices, vacuum techniques etc. The IMFP determines the intensity and distribution of the analytical peaks, and the sampling depth of analysis. The evaluation of experiments is based mainly on calculated IMFP data. The National Institute of Standards & Technology (NIST, Gaithersburg, USA) elaborated databases on the IMFP and of the electron elastic scattering cross-sections.

The joint workshop was organized and held in the Res. Inst. Technical Physics and Materials Science, in the KFKI Campus of the Hungarian Academy of Sciences. It was organized together with the Roland Eotvos Physical Society and with the IEEE ED Hungary Chapter. The workshop was sponsored by the Hungarian Committee for Technical Development (OMFB), Paks Nuclear Power Plant Co. and by the IEEE Electron Devices Society. Thirty participants from 11 countries presented lectures, and software demonstrations. It was a summit meeting of prominent scientists in the field: C. J. Powell (NIST), A. Jablonski (Warsaw), S. Tougaard (Odense), K. Goto (Nagoya), C. M. Kwei (Hsinchu), Z. J. Ding (Hefei) et al. Invited lectures followed by discussions summarized our present knowledge on the IMFP. The main topics of the workshop were:

- Theoretical methods for calculating the IMFPs
- Experimental methods, mainly elastic peak electron spectroscopy
- Interpretation of electron spectra by Monte Carlo and transport methods.
- Calculated and experimental IMFP data. Reasonable agreement with the NIST data.
- Data interpretation and quantification, background subtraction
- Surface excitation in electron spectroscopy
- Applications of the IMFP.

Results archived by the EU COPERNI-CUS ERBIC 15CT960800 Projects have been presented.

A booklet of extended abstracts was forwarded to participants (Editor: G. Gergely and M. Menyhard, Res. Inst Techn. Phys. Mat. Sci. Budapest, E-MAIL: gergely@mfa.kfki.hu). It was proposed to organize the 2nd workshop on the IMFP in Prague in 2001.

Mikael Ostling, Editor

ED/MTT Egypt Chapter

by Ibrahim Salem

The MTT/EDS Egypt chapter, in cooperation with the National Radio Science Committee, had organized its 17th National Radio Science Conference (NRSC) from 22 to 24 February 2000 at Menufiya Faculty of Electronic Engineering, Minufiya University. The conference included a special session for Electronics and Photonics at which the following papers were presented:

- Theory of nonlinear transport of hot carriers across semiconductor junction
- A proposal graded band gap channel MOSFET
- Laser altimetry and its application in geographic scanning

- Design of radiation hard CMOS APS image sensors for space applications
- A new proposed method for the design of broadband microwave planar diode detectors

The 141 participants were from 15 universities in Egypt, two participants from USA, two participants from Canada, one from France. The conference is technically co-sponsored by the IEEE-ED Society, and the IEEE catalog number of the proceeding is 00EX396.

Gady Golan, Editor

ED University of Nis Student Branch Chapter

by Aleksandar Jaksic

Our ED Student Branch (SB) Chapter was officially formed in March 1999 immediately before the tragic war events in Yugoslavia. These events have somewhat disturbed the initial plans for chapter activities. We were even afraid that the chapter would not survive the consequences of war, particularly the post-war economic crisis, and are now very happy to realize that we were completely wrong. Due to the understanding of the people from EDS and IEEE Region 8, and, of course, our own efforts, the chapter not only survived, but even increased its membership. As the result, in April 2000 the expansion to include SSC Society as a sponsor was approved. We would particularly like to mention the precious help of the "older" Yugoslavia ED/SSC Chapter in all our activities.

Activities of the SB chapter in the previous period included a promotional campaign among students of our university, which involved lectures of higher grade IEEE members on IEEE missions and benefits of IEEE membership to the students. We have had successful educational and technical meetings with videotape projections. Videotapes were borrowed from the EDS Lending Library and were of good quality. Several interesting social events were also organized, such as parties and picnics, some in connection with the STAR program we are coordinating. The SB chapter members had also helped in the organization of a major event, the 2000 International Conference on Microelectronics (MIEL) conference (Nis, 14-17 May 2000).

We have ambitious plans for future activities, as follows. More meetings with videotape projections will be held. We will try to arrange a lecture of one of the EDS Distinguished Lecturers later this year. We are also trying to implement a project to provide our Student Branch, and SB Chapter with appropriate room, a computer with access to IEEE electronic products (unfortunately, most chapter members still don't have access to the Internet) and a small library subscribed to Student Branch Magazine Package containing 33 magazines.

For more information, please contact the Chapter Chair, Aleksandar Jaksic (*a.jaksic@ieee.org*).

ED Novosibirsk State Technical University Student Branch Chapter by Alexander Gridchin

As it was planned for the second part of the past year, some activities were organized by students of our Student Branch and Student Branch chapters. English classes were organized in October - November 1999 and eight IEEE student members have increased their language level. Due to a close cooperation with IEEE Region 8 Vice-Chair for Student Activities, Mrs. Gozde Bozdagi, we held an open presentation of our Student Branch to all students and interested supervisors of our University on 8 December 1999. The videotape record of the presentation (in Russian) was made and can be extended to all interested Russian colleagues.

The 37th annual student conference "Days of Science 2000" was held at Novosibirsk State Technical University. Ten of our IEEE student members took part in this conference. Within the program of membership promotion, the IEEE Student Branch established two awards for the best paper. Vadim V. Nekrasov, one of our student members, was awarded free IEEE membership for 2001.

In March 2000, two representatives of our Student Branch took part in the Russian Scientific-Practical Conference of Students, Young Specialists and Scientists "Modern Technique and Technology" in the Tomsk Polytechnical University. Our counselor, Alexander V. Gridchin, made an invited lecture on modern problems and prospective of the IEEE for students in XXI century. This lecture will be published in the conference proceedings.

Within our educational activities, in 2000 we plan to invite several scientists to give lectures to our students. As of April 2000, we've organized two such lectures. The first was devoted to the analysis and forecast of trends in modern micro and nanoelectronics and the second to the quantum Hall effect. Both lectures are available as videotapes (in Russian).

The 1st Siberian Russia Student Workshop on Electron Devices and Materials (EDM'2000) will be held from 19-22 September 2000 at Novosibirsk State Technical University. This Workshop will be devoted to the 50th anniversary of our university. More information is available on the web at http://www.ref.nstu.ru/edm or via E-MAIL: algrid@ref.nstu.ru.

The WWW Home Page of our Student Branch is under preparation. Web sites of ED and SSC SB chapters will also be included into this page. We will continue efforts on promoting information about the IEEE and its societies and involving students and scholars in the scientific and educational activity worldwide.

MTT/ED/AP/CPMT/SSC West Ukraine Chapter

by Mykhailo Andriychuk

The main point of our chapter's activities during the past half-year period was the International Conference on Modern Problems of Telecommunications, Computer Science and Engineers Training (TCSET'2000). It was held at Mountain Resort Slavsko, Lviv region, Ukraine, February 14-19, 2000. The conference was organized under the IEEE aegis by the State University "Lvivska Polytechnika". Conference participants were representing five European countries (Moldova, Poland, Russia, Switzerland, and Ukraine). From 150 authors who submitted their papers to the Organizing Committee, more than 90 scientists attended the conference and took part in eight oral sessions. The majority of participants were from Ukrainian and Polish universities where investigations in electronics and communications are carried out. The high scientific level of the conference was confirmed by high quality of presented reports. Presented reports deal with modern problems of mathematical and computer simulation of electronic, electrical circuits and devices, state-of-the-art informaton and communication technologies, methods of signal and image processing, and aspects of biomedical engineering.

From October 1999 through April 2000, seven meetings with scientific and technical subjects of interest to the chapter's members were held. In the area of the educational programs the chapter's members had the opportunity to attend the following courses: "Chemical and Physical Bases of Micro Technology" (Prof. Lubov I. Zakalyk, Lviv State University "Lvivska Politekhnika"); "Technology and Design of Micro Circuits. Connections and Interconnections in Integrated Circuits" (Prof. Lubov I. Zakalyk, Lviv State University "Lvivska Politekhnika"); "Materials for Optoelectronics and Coherent Optics" (Dr. Dmytro I. Popovych, Institute for Applied Problems of Mechanics and Mathematics of NASU).

The chapter's activities were also focused on membership development. Four new MTT and ED society members were recruited in 1999. These new members are supported from the chapter budget. Due to the efforts of chapter and financial support of the IEEE Solid State Circuits Society, six new SSC society members joined our chapter. Two chapter members, Professor Nikolai N. Voitovich and Prof. Zenoviy T. Nazarchuk, were nominated as Senior Members in 1999.

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

by Gennadiy Churyumov

During the past period, the activity of our Joint Chapter was focused on two main aspects: the cooperation in organization of the international conferences, workshops and seminars and the efforts in increasing the membership and including the participation of students and post-graduate students in EDS/MTTS activities.

The 3rd International Conference on Antenna Theory and Technics (ICATT'99) was organized by our joint chapter from 8-12 September 1999 at Sevastopol State Technical University. More than 130 experts from 10 countries participated. There were 15 invited and more than 200 regular papers presented in 12 oral sections. All papers were published in the ICATT'99 Proceedings in English.

The Chapter also participated in the organization of several successful events. The regular Seminars on Medical Electronics and Integral Equations in Electromagnetics have been held monthly at the Kharkov State Technical University of Radio Electronics. We are doing our best to include our students in the worldwide scientific and educational process. For this purpose, one time per semester we hold a lecture for students of the Electronics Engineering Faculty of Kharkov State Technical University of Radio Electronics. We will soon organize language courses for our members in order to improve their English.

For further information, please contact the Chapter Chair: Prof. Yakov Shifrin, Kharkov State Technical University of Radio Electronics, 14 Lenin Ave., Kharkov 61166, Ukraine; TEL: 380 572 409430; FAX: 380 572 409113; E-MAIL: shifrin@kture.kharkov.ua.

Ninoslav Stojadinovic, Editor

Asia & Pacific (Region 10) **ED/LEO** Australia Chapter

by Dr. Chennupati Jagadish

The ED/LEO Australia Chapter is organizing (jointly with Australian National University) the 11th International Semiconducting and Insulating Materials Conference in Canberra during July 3-7, 2000. Further information about the conference is available on the web at: http://rsphysse .anu.edu.au/admin/simc2000/. Dr. Alfred Ipri, IEEE Distinguished Lecturer visited the chapter in Canberra and gave a seminar on "Flat Panel Displays".

The ED/LEO Australia Chapter is also a technical co-sponsor of the 2000 Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD2000), to be held in Melbourne during 6-8 December 2000. Conference information can be obtained via the web at: http://www .latrobe.edu.au/www/commad2000/.

For further information about Chapter activities, please contact Chapter Chair: Professor Chennupati Jagadish, Australian National University; TEL: 61-2-6249-0363; 61-2-6249-0511; FAX: E-MAIL: c.jagadish@ieee.org or cxj109@rsphysse .anu.edu.au.

LEO/ED Victoria Chapter by Dalma Novak

The joint IEEE LEOS & EDS Victorian Chapter had a very busy year in 1999 with over eight activities organized. The first activity for 2000 was an EDS Distinguished Lecture given by Dr. Alfred Ipri from the David Sarnoff Research Center in Princeton, NJ USA, who discussed the topic of Flat Panel Displays. The talk was presented on 27 April 2000.

AP/ED Bombay Chapter

by Prof. Juzer Vasi

The new AP/ED Bombay Chapter was inaugurated on February 14, 2000 at a well-attended function held at the Indian Institute of Technology (IIT), Bombay.

Present at the inaugural function were EDS Distinguished Lecturer, Professor Hiroshi Iwai of the Tokyo Institute of Technology, and Dr. Renuka Jindal, Editor-in-Chief of the IEEE Transactions on Electron Devices, who as the Chapter Partner played a key role in the formation of the Bombay Chapter.

The AP/ED Bombay Chapter was officially inaugurated by Prof. S.C. Sahasrabuddhe, Director, IIT Bombay, who welcomed the initiation of this important activity in Bombay under the auspices of the IEEE. Dr. Jindal made a presentation of the EDS charter and the role of EDS chapters and benefits available to them. Professor Iwai (in his capacity as the Chairman of the EDS Regions/Chapters Committee) discussed the growth and activities of EDS chapters worldwide. Also speaking on the occasion were Mr. R. Muralidharan, Chairman of the IEEE Bombay Section, and Professor Girish Kumar, who highlighted some aspects of APS.

Prof. Iwai delivered his Distinguished Lecture on "Sub-100 nm MOSFET Technologies", which focused on current and future trends in CMOS as devices are scaled below 100 nm. This authoritative talk was extremely well received by the large audience (numbering over 100) which consisted of EDS and APS members, other IEEE members from the Bombay Section, and faculty and students from IIT Bombay as well as several other colleges in and around Bombay.



Participants at the Inaugural Function of the IEEE AP/ED Bombay Chapter held at IIT Bombay. Prof. Hiroshi Iwai and Dr. Renuka Jindal can be seen standing in the center of the front row.]

During their visit to Bombay, Professor Iwai and Dr. Jindal also discussed various issues with EDS members during an hourlong meeting. This lively discussion touched upon the role of EDS chapters, the benefits available to EDS chapters, how the EDS could be made more responsive to members and the future activities of the Bombay Chapter. Dr. Renuka Jindal also took the opportunity of this meeting with the EDS members to present some statistics on the IEEE Transactions on Electron Devices. The audience (many of whom were subscribers and/or contributors to the Transactions) offered several interesting comments and suggestions.

The elected office-bearers of the new AP/ED Bombay Chapter are: Juzer Vasi, Chairman (*j.vasi@ieee.org*); Girish Kumar, Vice-Chairman (*gkumar@ee.iitb.ernet.in*); Arvind Shaligram, Vice-Chairman (*ads@electronics.unipune.ernet.in*); Ramgopal Rao, Secretary/Treasurer (*ramgopal_rao@ieee.org*). For further information on the Bombay Chapter, please contact Juzer Vasi, EE Department, IIT Bombay, Powai, Mumbai 400076, India; FAX +91-22-5783480; E-MAIL: *j.vasi@ieee.org*.

ED/MTT India Chapter

by Dr. K.S. Chari

The chapter had held several activities as summarized below:

At the invitation of the chapter, EDS Regions/Chapters Chair, Prof. Hiroshi Iwai of the Tokyo Institute of Technology, delivered a half day workshop entitled "Sub-100 nm MOS Technologies" in the Ministry of Information Technology, Delhi on 16 February. The talk was much appreciated by the attendees. About 50 participants from industry, academic and government R&D groups attended the talk.

Prof. Iwai also visited Delhi University South Campus on 17th February morning and interacted with the faculty and students of the Electronics Science Deptartment Prof. Radhey Gupta, Ex-com member of the chapter, coordinated the visit of Characterisation Labs in the Ministry of Information Technology in the afternoon of 17th Feb. and met with students. The Chapter Chair hosted this visit.

A lecture entitled "Microwave and Millimeter Wave Planar Antennas" was delivered by Dr A.R. Jha, Technical Director of Jha Technology Consulting Services (USA) on 10 March at the Indian Institute of Technology Delhi. About 30 participants attended the talk.

A two-day National Symposium (27-28 March) on Advances in Microwaves and Light Waves was co-sponsored by the chapter at Delhi University. The event was also co-sponsored by the Microwave Forum of Delhi University and IEEE AES/COM/LEO India Chapter. The symposium focused on development in Optical Fibre Technologies, Fibre Sensors and Components, Microwave Materials/Components and Antennas, High Power Microwave Devices and Radar and Satellite Communication. About 150 participants attended the symposium. The symposium was coordinated by Professors Enakshi Sharma, Mridula Gupt, A. K. Verma and Mukesh P. Singh.

EDS AdCom representatives Prof. Hiroshi Iwai (EDS Regions/Chapters Chair) and Dr. Renuka Jindal (Chapter Partner), visited the chapter on 16 February. Both Prof. Hiroshi and Dr. Jindal addressed members on EDS programs and activities and reviewed the on-going efforts of the chapter. The Chapter Chair gave a brief talk on the many initiatives and efforts of the chapter. The interactions with EDS AdCom representatives brought out several useful suggestions that the chapter will be following-up to further strengthen its activities.



Meeting of Delhi based EDS members, etc. with visiting EDS AdCom members, Prof. Hiroshi Iwai and Dr. Renuka Jindal

The chapter executives met on 18 February and planned for activities during the rest of the year. The financial support from the chapter to the upcoming events of NASET 2000 at Kurukshetra University, STAR 2000 and Workshop in Microwave and Photonics were decided.

ED Malaysia Chapter

by Dr. Burhanuddin Yeop Majlis

ED Malaysia will organize the 2000 IEEE International Conference on Semiconductor Electronics (ICSE'2000) from 13-15 November, 2000. The conference will be held in the Guoman Port Dickson Resort, Negeri Sebilan, Malaysia. This conference is the fourth international conference organized by the ED Malaysia Chapter. The scope of the conference covers areas related to semiconductor physics, devices, materials, process, modeling, microsensor and MEMS, MMIC, etc. The deadline for submission of a full paper is 15 August 2000.

For further information about chapter activities, please contact Chapter Chair: Burhanuddin Yeop Majlis; TEL: 603-8295862; FAX: 603-8259080; E-MAIL: burhan@eng.ukm.my.

IEEE REL/CPMT/ED Singapore Chapter

by YC Ng

The new committee for the REL/ CPMT/ED Singapore Chapter for the year 2000 was formed. Dr. SH Ong agreed to run for one more year as the Chapter Chair, and he is assisted by Dr. Radha as Vice-Chair. To prepare for the international conferences that the chapter used to organize, two sub-committees were formed. The International Symposium on Physical and Failure Analysis of Integrated Circuits (IPFA) is headed by Dr. Pey Kin Leong; and the Electronic Packaging Technology Conferences (EPTC) chaired by Dr. Lim Thiam Beng.

A four-part evening video course was organized by the chapter and EDS from March 7 - 10. The title of the video course is "Giga-Scale Video Course Program" and covered CMOS decide and process design to the challenges and manufacturing issues. Seventeen participants attended the video cum evening talks at Nanyang Technological University (NTU).

The second technical talk was held in the Faculty Club, National University of Singapore. Dr. Leo G. Henry of Antigua Electronics, USA, presented a topic titled "Transmission Line Pulse ESD Testing of ICs". There were 18 participants.

W. K. Choi, Editor



Sitting: From left to right S. Asai (Regions/Chapters Committee Member), K. Tsubouchi (New Chair), H. Watanabe (Former Chair), H. Iwai (Regions/Chapters Committee Chair). Standing: From left to right Y. Watanabe (New Treasure), N. Yokoyama (New Secretary), M. Fukuma (Former Secretary), K. Masu (New Secretary).]

New officers for the Japan (former Tokyo) Chapter

by Hiroshi Iwai

The chair and secretary of the ED Japan Chapter* (The name of ED Tokyo Chapter changed to ED Japan Chapter according to the change of former IEEE Tokyo Section to IEEE Japan Council) - Dr. Hisatsune Watanabe (NEC), Chair, and Dr. Masao Fukuma (NEC), secretary - retired at the end of their 2 year term, and new officers were elected on January 24th. They are Prof. Kazuo Tusbouchi (Tohoku Univ.) — Chair, Naoki Yokoyama (Fujitsu) — Vice-Chair —, Kazuya Masu (Tohoku Univ.) — Secretary, and Yuu Watanabe (Fujitsu) - Treasurer. We would like to thank Drs. Watanabe and Fukuma for their great contribution to the ED Tokyo Chapter and welcome the new officers to the ED Japan Chapter.

Japan Chapter's Annual Briefing Session for the 1999 IEDM

by Kazuya Masu

On January 24th, an annual Briefing Session for the 1999 IEDM was held in Tokyo, where five speakers were invited on the highlights of the 1999 IEDM. Topics covered were Integrated Circuit, CMOS Devices, CMOS Interconnects/ Process, Modeling/ Simulation, and Compound/Quantum Devices. The number of participants was about 120, including non-EDS members. This is a unique opportunity for most Japanese engineers who do not have a chance to attend the IEDM held in the U.S. to obtain the latest information presented

to deliver summary talks

at the largest meeting of the Electron Devices Society. Many questions were asked of the speakers and the meeting was very successful.

ED Japan Chapter Committee Meeting

by Kazuya Masu

On January 24th, after the IEDM Briefing Session, the committee meeting of the ED Japan Chapter was held, and the activity plan for 2000 was discussed. Former and new officer members of the chapter, as well as Drs. S. Asai and H. Iwai attended from the EDS Regions/Chapter Committee. It was concluded that more distinguished lectures should be given for the Japan Chapter in order to stimulate chapter activity, and that an officer member of the chapter will serve as the DL. The chapter will make an effort to increase the number of student members and found a chapter award for students. More concrete ideas will be given by the chapter officers in the next issue of the newsletter.

Hiroshi Iwai, Editor



The Annual Briefing Session for the 1999 IEDM held on Jan. 24, 2000.

Announcement From New Japan Chapter Chair

by Kazuo Tsubouchi

New officers for 2000-2001 are Kazuo Tsubouchi (Chair), Naoki Yokoyama (Co-Chair), Kazuya Masu (Secretary) and Yuu Watanabe (Treasurer). The committee meeting of the ED Japan Chapter was held on January 24. Based on the discussion at the meeting, the Japan chapter will host the following activities this year. The chapter will technically support domestic Workshops sponsored by the Institute of Electronics, Information and Communications Engineers (IEICE) in Japan. The workshops will be held monthly, and are organized by two technical groups of the IEICE, Silicon Devices and Materials and Integrated Circuits and Devices groups. Furthermore, starting this year, the chapter will support the workshops organized by Silicon Technology Division of Japan Society of Applied Physics. The Advanced Metallization Conference Asia/Japan session will also be supported by the chapter. In the above workshops and conference, more than one hundred participants are expected to attend and exchange new ideas through deep discussions. In order to stimulate the chapter activity, at the above workshops, several distinguished lecturers' presentations will be planed. For increasing the number of EDS members, the chapter found a chapter award, "Young Researcher Encouragement Award". Students and young researchers who present attractive and novel works will be awarded. To activate the DL programs and award system, a DL nomination committee and an Award committee have been organized in the chapter.

As we have held every year so far, the chapter will plan to have an annual Briefing Session for the IEDM after the conference for giving opportunity to most of Japanese researchers and engineers who do not have chance to attend the IEDM held in the US to obtain the latest information.



Kazuo Tsubouchi, ED Japan Chapter Chair



Kazuya Masu, ED Japan Chapter Secretary

ED Korea Chapter

by Se-Geun Park Beginning January 2000, the ED Korea Chapter has a new chair and committee.





(from left) Sung W. Hwang, Taeyoung Won , Se-Geun Park, and Hyungsoon Shin.

They are Se-Geun Park (Chair, Inha University, TEL: +82-32-860-7434; FAX: +82-32-875-5882; E-MAIL: sgpark@inha.ac.kr); Taeyoung Won (Secretary, Inha University, twon@inha.ac.kr); Sung W. Hwang (Publicity, Korea University, swhwang@kuccnx.korea.ac.kr); and Hyungsoon Shin (Treasurer, Ewha Woman's University, hsshin@mm.ewha.ac.kr).

The chapter co-sponsored the 7th Korean Conference on Semiconductors at Korea University, Seoul, Korea during January 26 - 28, 2000. This conference is the largest conference in semiconductor area in Korea, and has been organized jointly by KPS (Korean Physical Society), IEEK (Institute of Electronics Engineers of Korea), KIEE (Korean Institute of Electrical Engineers), and MRSK (Materials Research Society of Korea). At the opening ceremony, the Chapter Chair presented the Best Poster Paper Award to Jong Wha Lee and Kang Jae Lee who were selected at the last year's conference. The titles were "Atomic Layer Deposition of TiN Using TEMAT, NH3 and N2" and "Growth of AlGaN Thin Films by Horizontal MOCVD and Si Doping Characteristics", respectively. This year, two outstanding posters were also nominated for the ED Korea Chapter by the Program Committee of the conference. One is presented by K. H. Baek of Kookmin University and the other is by Suk-Hun Lee of Kyungpook National University. They will be reviewed at the chapter meeting in April, and awarded at next year's conference.

ED/SSC Seoul Chapter

by Kwang S. Yoon

The first IEEE Asia Pacific Conference on ASIC'99 (AP-ASIC'99) organized by ED/SSC Seoul chapter was held at Yonsei University, Seoul, Korea, August 23-25, 1999. The purpose of the conference was to promote research and develop activities in solid-state circuits within IEEE Region 10 countries. AP-ASIC featured a half-day tutorial session, two keynote speeches, two invited papers, and 102 paper presentations (91 papers in 21 regular sessions and 11 papers in four special sessions). A total of 231 registrants from ten countries (Korea, Taiwan, United States, Japan, Australia, Singapore, Canada, Portugal, Germany, and Macao) participated in AP-ASIC'99. Two keynote speakers in the

plenary session, Dr. Hyung-Kyu Lim (Samsung Electronics Co., Korea) and Dr. Nicky Lu(Etron Technology Inc., Taiwan) discussed semiconductor memories in the year 2001 and beyond, and trends of the IC industry in the 21st century, respectively. During AP-ASIC'99, the IEEE membership drive desk set up next to the on-site registration desk. The IEEE SSCS special membership promotion program that was offered enabled about 30 students to join IEEE.

The ED/SSC Secul Chapter is preparing the second meeting, Asia-Pacific Conference on ASIC 2000 (AP-ASIC 2000) to be held in Cheju island, Korea, August 28-30, 2000. The updated information on AP-ASIC 2000 is available at the web site, http://www.ap-asic.org. Prof. Moon-Key Lee, Chairman of the ED/SSC Secul Chapter accepted the Chapter of Year award during IEDM'99, December 15, 1999. The ED/SSC Secul Chapter presented 1997 and 1998 IEDM videotape courses to a total of 160 attendees at Inha University, Inchon, Korea during December 1999.

The 7th Korean Conference on Semiconductors (KCS) was held at Korea University, Seoul, Korea, January 26-28, 2000.



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EDS Distinguished Lecturer and ED Sweden Chapter Chair, Prof. Mikael Ostling.

The 7th KCS sponsored by Korea Semiconductor Industry Association, SEMI Korea, ED Korea Chapter, and ED/SSC Seoul Chapter included six invited papers, 217 papers in 36 regular sessions, and 124 papers in three poster sessions. The plenary session featured two talks, "Present and Future of Memory Business", presented by President Sang-Ho Park, Hyundai, "Electronics and Si Carbon Device" by Prof. Mikael Ostling, Royal Institute of Technology at January 26. Prof. Ostling, as an ED Distinguished Lecturer and Chapter Chair of the ED Sweden Chapter, presented a seminar to 35 attendees on "Polysilicon Emitter SiGe BJT Devices and Technology for High Speed Circuit Application" at Yonsei University, Seoul Korea, January 28, 2000.

For further information, please contact the Chapter Chair, Prof. Moon-Key Lee (*mklee@bubble.yonsei.ac.kr*) or the Chapter Secretary, Prof. Kwang S. Yoon (*ksyoon@inha.ac.kr*).

Hisayo Momose, Editor



Attendees of AP-ASIC'99 with the organizing committee members.

EDS Meetings Calendar

(As of 17 May 2000)

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

July 3 - 7, 2000, * **IEEE SEMICONDUCTING AND INSULATING MATERIALS CONFER-ENCE**, <u>Location</u>: Australian National University, Canberra, Australia, <u>Contact</u>: Chennupati Jagadish, <u>Tel</u>: 61-2-6249-0363, <u>Fax</u>: 61-2-6249-0511, <u>E-Mail</u>: c.jagadish@ieee.org, <u>Deadline</u>: Past Due, <u>www</u>: http://rsphysse.anu.edu.au/admin/ simc2000/

July 10 - 13, 2000, @ IEEE INTERNATIONAL VACUUM ELECTRON SOURCES CONFER-ENCE, Location: Disney's Coronado Springs Resort, Orlando, FL, <u>Contact</u>: Vita Feuerstein, <u>Tel</u>: (732) 562-6826, <u>Fax</u>: (732) 981-1203, <u>E-Mail</u>: vita@ieee.org, <u>Deadline</u>: Past Due, <u>www</u>: http://ctd.grc.nasa.gov/5620/IVESC_2000.html

July 11 - 13, 2000, T **INTERNATIONAL MICROPROCESSES & NANOTECHNOLOGY CONFERENCE**, <u>Location</u>: University of Tokyo, Tokyo, Japan, <u>Contact</u>: Hiroaki Masuko, <u>Tel</u>: 81-3-5814-5800, <u>Fax</u>: 81-3-5814-5823, <u>E-Mail</u>: hmasuko@bcasj.or.jp, <u>Deadline</u>: Past Due, <u>www</u>: http://www.nano.ee.es.osaka-u.ac.jp/mnc/

July 14 - 15, 2000, T **IEEE INTERNATIONAL WORKSHOP ON INTEGRATED POWER PACKAGING**, Location: Westin Hotel, Waltham, MA, <u>Contact</u>: Bob Alongi, <u>Tel</u>: (607) 729-9949, <u>Fax</u>: (607) 729-7129, <u>E-Mail</u>: boston.ieee@ieee.org, <u>Deadline</u>: Past Due, <u>www</u>: Not Available

July 24 - 28, 2000, T **INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: The Riviera, Las Vegas, NV, <u>Contact</u>: Jean Riley, <u>Tel</u>: (703) 264-7553, <u>Fax</u>: (703) 264-7551, <u>E-Mail</u>: jeanr@aiaa.org, <u>Deadline</u>: Past Due, <u>www</u>: http://www.aiaa.org

July 25 - 27, 2000 T **INTERNATIONAL SYM-POSIUM ON LOW POWER ELECTRONICS & DESIGN**, <u>Location</u>: Hotel Excelsior Palace, Rapallo/Portofino Coast, Italy, <u>Contact</u>: David Blaauw, <u>Tel</u>: (512) 794-4356, <u>Fax</u>: (512) 794-4793, <u>E-</u> <u>Mail</u>: david_blaauw@email.mot.com, <u>Deadline</u>: Past Due, <u>www</u>: http://eda.polito.it/ispled-00

August 7 - 9, 2000 * IEEE CORNELL UNIVERSI-TY CONFERENCE ON HIGH PERFORMANCE DEVICES, Location: Cornell University, Ithaca, NY, Contact: Leda Lunardi, Tel: (732) 345-3218, Fax:

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

(732) 345-3040, <u>E-Mail</u>: leda@research.att.com, <u>Deadline</u>: Past Due, <u>www</u>: http://www.iiiv.cornell.edu/ cc00/

August 20 - 23, 2000, ? **TOPICAL WORKSHOP ON HETEROSTRUCTURE MICRO-ELECTRON-ICS**, <u>Location</u>: Kyoto Research Park, Kyoto, Japan, <u>Contact</u>: Takashi Mizutani, <u>Tel</u>: 81-52-789-5230, <u>Fax</u>: 81-52-789-5232, <u>E-Mail</u>: tmizu@ nuee.nagoya-u.ac.jp, <u>Deadline</u>: Past Due, <u>www</u>: http://www.nuee. nagoya-u.ac.jp/institute/ TWHM00/

August 28 - 31, 2000, T **INTERNATIONAL CONFERENCE ON SOLID STATE DEVICES AND MATERIALS**, <u>Location</u>: Sendai International Center, Sendai, Japan, <u>Contact</u>: Tomoyuki Shimada, <u>Tel</u>: 81-3-5814-5800, <u>Fax</u>: 81-3-5814-5823, <u>E-Mail</u>: ssdm@bcasj.or.jp, <u>Deadline</u>: 7/7/00, <u>www</u>: http://ssdm.bcasj.or.jp/

September 6 - 8, 2000, * **IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMI-CONDUCTOR PROCESSES AND DEVICES**, <u>Location</u>: Sheraton Hotel, Seattle, WA, <u>Contact</u>: Fely Barrera, <u>Tel</u>: (650) 723-1349, <u>Fax</u>: (650) 725-7731, <u>E-Mail</u>: fely@gloworm.stanford.edu, <u>Deadline</u>: Past Due, <u>www</u>: http://www-tcad.stanford.edu/sispad2000.html

September 8, 2000, T **HIGH FREQUENCY POST GRADUATE STUDENT COLLOQUIUM**, <u>Location</u>: University College Dublin, Dublin, Ireland, <u>Contact</u>: Thomas J. Brazil, <u>Tel</u>: 353-1-706-1929, <u>Fax</u>: 353-1-283-0921, <u>E-Mail</u>: tom.brazil@ucd.ie, <u>Deadline</u>: Past Due, <u>www</u>: http://hertz.ucd.ie/ hfpg2000/main.html

September 10 - 15, 2000 T **INTERNATIONAL CONFERENCE ON MOLECULAR BEAM EPI-TAXY**, <u>Location</u>: Beijing International Hotel, Beijing, China, <u>Contact</u>: MBE-XI Secretariat, <u>Tel</u>: 86-10-68597750, <u>Fax</u>: 86-10-68597748, <u>E-Mail</u>: cllan@cashq.ac.cn, <u>Deadline</u>: Past Due, <u>www</u>: Not Available

September 11 - 13, 2000, T **EUROPEAN SOLID STATE DEVICE RESEARCH CONFERENCE**, <u>Location</u>: University College, Cork, Ireland, <u>Contact</u>: Conference Secretary, <u>Tel</u>: 353-21-904398, <u>Fax</u>: 353-21-270271, <u>E-Mail</u>: essderc2000@nmrc.ucc.ie, <u>Deadline</u>: Past Due, <u>www</u>: http://www.essderc.org

September 11 - 15, 2000, T INTERNATIONAL CRIMEAN CONFERENCE ON MICROWAVE & TELECOMMUNICATION TECHNOLOGY,

Location: Center of Business & Culture, Sevastopol, Crimea, Ukraine, <u>Contact</u>: Pavel V. Artukhoy, <u>Tel</u>: 38-0692-555768, <u>Fax</u>: Not Available, <u>E-Mail</u>: weber@execs.com, <u>Deadline</u>: Past Due, <u>www</u>: http://ieee.orbita.ru/aps/crim00e.htm

September 12 - 14, 2000, * **IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFAC-TURING CONFERENCE AND WORKSHOP**, <u>Location</u>: Fairmont Copely Plaza, Boston, MA, <u>Con-</u> <u>tact</u>: Margaret Kindling, <u>Tel</u>: (202) 289-0440, <u>Fax</u>: (202) 289-0441, <u>E-Mail</u>: mkindling@semi.org, Deadline: Past Due, <u>www</u>: http://www.semi.org

September 12 - 14, 2000, T **EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE**, <u>Loca-</u> <u>tion</u>: University College of Cork, Cork, Ireland, <u>Contact</u>: Herbert Grunbacher, <u>Tel</u>: 43-4242-2004-123, <u>Fax</u>: 43-4242-2004-179, <u>E-Mail</u>: hg@cti.ac.at, <u>Deadline</u>: Past Due, <u>www</u>: http://www.essderc.org/

September 12 - 15, 2000 T INTERNATIONAL CONFERENCE ON MATHEMATICAL METHODS IN ELECTROMAGNETIC THEORY, Location: Kharkov State University, Kharkov, Ukraine, <u>Contact</u>: MMET'2000, <u>Tel</u>: 380-572-448595, <u>Fax</u>: 380-572-441105, <u>E-Mail</u>: mybox@public.kharkov.ua, <u>Deadline</u>: Past Due, <u>www</u>: Not Available

September 14 - 16, 2000 T **INTERNATIONAL CONFERENCE ON MICROWAVE AND MIL-LIMETER WAVE TECHNOLOGY**, <u>Location</u>: Beijing International Convention Center, Beijing, China, <u>Contact</u>: Fang Min, <u>Tel</u>: 86-10-68283463, <u>Fax</u>: 86-10-68283458, <u>E-Mail</u>: shaz@sun.ihep.ac.cn, <u>Deadline</u>: Past Due, www: http://www.cie-china.org/ icmmt2000.htm

September 17 - 20, 2000, **# IEEE INTERNATION-AL CONFERENCE ON COMPUTER DESIGN:** VLSI IN COMPUTERS AND PROCESSORS, Location: Austin Marriott at the Capital, Austin, TX, <u>Contact</u>: Mary Kate Rada, <u>Tel</u>: (202) 371-1013, <u>Fax</u>: (202) 728-0884, <u>E-Mail</u>: m.k.rada@ computer.org, <u>Deadline</u>: Not Available, <u>www</u>: Not Available

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

September 17 - 22, 2000, * **IEEE PHOTOVOLTA-IC SPECIALISTS CONFERENCE**, <u>Location</u>: Anchorage Hilton and William A. Egan Civic & Convention Center, Anchorage, AK, <u>Contact</u>: Americo F. Forestieri, <u>Tel</u>: (440) 234-1574, <u>Fax</u>: (440) 234-1574, <u>E-Mail</u>: moeforestieri@worldnet.att.net, <u>Deadline</u>: Past Due, <u>www</u>: http://ieeepvsc.nrel.gov

September 17 - 22, 2000 T **INTERNATIONAL CONFERENCE ON ION IMPLANTATION TECHNOLOGY**, <u>Location</u>: Alpbach Conference Center, Tyrol, Austria, <u>Contact</u>: IIT 2000, <u>Tel</u>: 49-9131-761-100, <u>Fax</u>: 49-9131-761-102, <u>E-Mail</u>: iit2000@iis-b.fhg.de, <u>Deadline</u>: Past Due, <u>www</u>: http://www.mfa.kfki.hu/IIT2000

September 18 - 20, 2000, **# INTERNATIONAL** SYMPOSIUM ON ULTRA CLEAN PROCESS-ING OF SILICON SURFACES, Location: Thermae Palace Hotel, Oostende, Belgium, <u>Contact</u>: Marc Heyns, <u>Tel</u>: 32 16 29 00 10, <u>Fax</u>: 32 16 29 05 10, <u>E-Mail</u>: info@timshel.be, <u>Deadline</u>: Past Due, <u>www</u>: http://www.imec.be/ucpss/ucpss.html

September 19 - 22, 2000, T **SIBERIAN RUSSIA STUDENT WORKSHOP ON ELECTRON DEVICES AND MATERIALS**, <u>Location</u>: Novosibirsk State Technical University, Novosibirsk, Russia, <u>Contact</u>: Alexander V. Gridchin, <u>Tel</u>: 7-383-246-0877, <u>Fax</u>: 7-383-246-0209, <u>E-Mail</u>: algrid@ref.nstu.ru, <u>Deadline</u>: Past Due, <u>www</u>: http://www.ref.nstu.ru/edm September 20 - 22, 2000, T **INTERNATIONAL CONFERENCE "ACTUAL PROBLEMS OF ELECTRON DEVICE ENGINEERING"**, <u>Location</u>: Saratov, Russia, <u>Contact</u>: A.A. Zakharov, <u>Tel</u>: 7-8452-257744, <u>Fax</u>: 7-8452-507563, <u>E-Mail</u>: aaz@star.sstu.runnet.ru, <u>Deadline</u>: Not Available, <u>www</u>: http://sstu.runnet.ru/apede2000.html

September 20 - 22, 2000, T **INTERNATIONAL CONFERENCE ON ADVANCED THERMAL PROCESSING OF SEMICONDUCTORS**, <u>Loca-</u> <u>tion</u>: Hilton Gaithersburg, Gaithersburg, MD, <u>Con-</u> <u>tact</u>: RTP Conference Secretariat, <u>Tel</u>: (719) 579-8050, <u>Fax</u>: (719) 579-8082, <u>E-Mail</u>: blojek@ atmel.com, <u>Deadline</u>: Past Due, <u>www</u>: http:// www.rtp-conference.org

September 24 - 26, 2000, * IEEE BIPOLAR/BIC-MOS CIRCUITS AND TECHNOLOGY MEET-ING, <u>location</u>: Minneapolis Marriott City Center Hotel, Minneapolis, MN, <u>Contact</u>: Janice V. Jopke, <u>Tel</u>: (612) 934-5082, <u>Fax</u>: (612) 934-6741, <u>E-</u> <u>Mail</u>: jjopke@aol.com, <u>Deadline</u>: Past Due, <u>www</u>: http://ectm.et.tudelft.nl/www/BCTM/

September 25 - 28, 2000, T **IEEE INTERNA-TIONAL DISPLAY RESEARCH CONFERENCE**, Location: Breakers Hotel, Palm Beach, FL, <u>Contact</u>: Ralph Nadell, <u>Tel</u>: (212) 460-8090 ext. 203, <u>Fax</u>: (212) 460-8090, <u>E-Mail</u>: rnadell@ newyork.palisades.org, <u>Deadline</u>: Past Due, <u>www</u>: http://www.sid.org September 26 - 28, 2000, T **ELECTRICAL OVER-STRESS/ELECTROSTATIC DISCHARGE SYMPO-SIUM**, <u>Location</u>: Disneyland Hotel, Anaheim, CA, <u>Contact</u>: ESD Association, <u>Tel</u>: (315) 339-6937, <u>Fax</u>: (315) 339-6793, <u>E-Mail</u>: eosesd@borg.com, <u>Deadline</u>: Past Due, <u>www</u>: http://www.eosesd.org

September 26 - 29, 2000 T **INTERNATIONAL CONFERENCE ON ACTUAL PROBLEMS OF ELECTRONIC INSTRUMENT ENGINEERING**, Location: Novosibirsk State Technical University, Novosibirsk, Russia, <u>Contact</u>: L.I. Lisitsyna, <u>Tel</u>: 7 (383-2) 46-06-19, <u>Fax</u>: 7 (383-2) 46-50-61, <u>E-</u> Mail: nrec@first.ntsu.nsk.su, <u>Deadline</u>: Past Due, <u>www</u>: Not Available

September 27 - 29, 2000, T **INTERNATIONAL CONFERENCE & WORKSHOP ON ELECTRO-MAGNETICS OF COMPLEX MEDIA - BIAN-ISOTROPICS**, <u>Location</u>: Congress Center, Instituto Superior Tecnico, Lisbon, Portugal, <u>Contact</u>: Afonso M. Barbosa, <u>Tel</u>: 351-1-8418482, <u>Fax</u>: 351-1-8417284, <u>E-Mail</u>: afonso.barbosa@lx.it.pt, <u>Deadline</u>: Past Due, <u>www</u>: http://www.lx.it.pt/bian2000

September 27 - 29, 2000, @ INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MAN-UFACTURING, Location: Hotel East 21st Tokyo, Tokyo, Japan, <u>Contact</u>: Sumitomo Hirota, <u>Tel</u>: 81-3-3815-8775, <u>Fax</u>: 81-3-3815-8529, <u>E-Mail</u>: issm@ blue.ocn.ne.jp, <u>Deadline</u>: Past Due, <u>www</u>: http:// www.issm.com

Editors Message

(continued from page 11)

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