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Editor-in-Chief: Krishna Shenai

Table of Contents

Upcoming Technical Meetings	1
• 1998 BCTM	• 1998 SOI
• 1998 ASMC	• 1998 CAS
A Message from the Editor-in-Chief	2
Society News	6
• Outgoing President's Message	
• President's Message – EDS Goals for 1998 and 1999	
• EDS Officers & AdCom Election Results & Profiles	
• Announcement of Newly Elected AdCom Members	
• Call for Nominations – EDS AdCom	
• EDS "Chapter of the Year" Award	
• The EDS/ECS Agreement and Letters Announcement	
• EDS Chapter Partners Program Activities:	
– Meeting with RL/CPMT/ED Singapore Chapter	
– Meeting with MTT/AP/ED Finland Chapter	
Regional & Chapter News	12
EDS Meetings Calendar	18
Newsletter Editorial Staff	20

Contributions Welcome

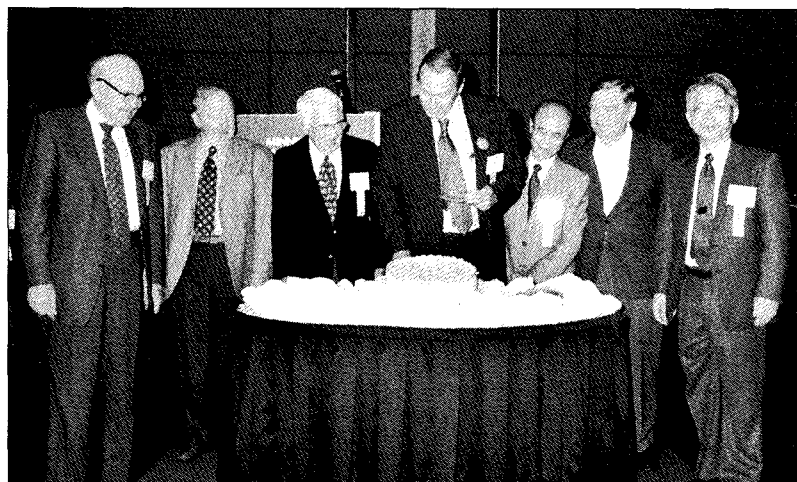
Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

Newsletter Deadlines

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

IEEE Electron Devices Society Newsletter

1998 Bipolar/BiCMOS Circuits and Technology Meeting (BCTM)



BCTM 1997 celebrated the fiftieth anniversary of the BJT with special guests (from l. to r.): Jack Kilby, Ray Warner, Jim Early, John Shier, Tak Ning, John Moll and Tetsushi Sakai.

The 1998 Bipolar/BiCMOS Circuits and Technology Meeting will be held in Minneapolis, MN September 27 - 29, 1998. This year's conference will have a short course, evening panel sessions, several invited papers, a vendor exhibition and a best student paper award.

The keynote speech will be given by Dr. Tetsushi Sakai from NTT on the topic "BiCMOS System on a Chip". The luncheon speech is titled "The Role of Engineers in Society" and will be given by Dr. Adel Sedra from the University of Toronto. The short course theme for 1998 is "Issues in High-Speed Data Communications". The two evening panel sessions are titled, "Will the Real Device for Power Amps Please Stand Up?", and "Do Ph.D.'s Make Better Engineers?".

The paper presentation includes papers given in the following areas: Analog/Digital Circuit Design, Radio Frequency Design, Device Physics, Modeling and Simulation, Process Technology, and Power Devices. The Analog/Digital Design session will feature papers on 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

(continued on page 3)

Your Comments Solicited

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

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A Message from the Editor-in-Chief

It has been nearly three years since we first started the publication of the new EDS Newsletter. Over these three years, the Newsletter has benefited from comments and suggestions that we received from EDS members worldwide. We still continue to strive to improve the quality of this publication so that it can best serve the interests of EDS members. I must thank Bill Van Der Vort and his dedicated staff, especially, Amanda Ferraioli and Robin Edwards, for excellent support. Without their help, it is hard to imagine that a publication of this magnitude is possible at such high quality.

The other key contributors to the continued success of our Newsletter are the Editors who provide accurate and timely inputs from various ED chapters. However, I must also emphasize the important role the chapter chairs and their members play. Without the dedicated voluntary efforts of these members, our Newsletter would not be feasible. I thank all of them for the excellent work they are performing.

Elias Towe, our Regions 3, 5 & 9 Editor, has decided to step down after nearly three years of dedicated service due to other responsibilities. On behalf of the Newsletter Oversight Committee, Editorial staff and EDS members, I would like to take this opportunity to thank Elias for his excellent service. We will certainly miss him. Replacing Elias is Mark H. Weichold whose biography follows. I welcome Mark and wish him success in his new role.



Mark H. Weichold

Mark H. Weichold joined the Electrical Engineering faculty at Texas A&M University in September of 1982 and now holds the rank of Professor. He received the BS, MS and Ph.D. degrees from Texas A&M University in Electrical Engineering and has worked for General Dynamics Ft. Worth Division, Motorola in Austin, Texas, and the U.S. Army Electronics Technology and Devices Laboratory in Ft. Monmouth, NJ. He is a registered professional engineer in the State of Texas and has consulted with companies such as MCC, Motorola, Los Alamos Labs, Electro Scientific Industries, Texas Instruments, and Dallas Semiconductor. He is a Senior Member of IEEE, and is a member of the American Physical Society and the American Vacuum Society. Research interests include topics related to electron device research such as process development, device design, fabrication and characterization. He is an author of more than 70 journal articles, conference papers and scientific

(continued on page 6)

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

1998

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

1999

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

*2000

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

Number in parenthesis represents term.

* Members elected 12/97

Correction from April Issue:

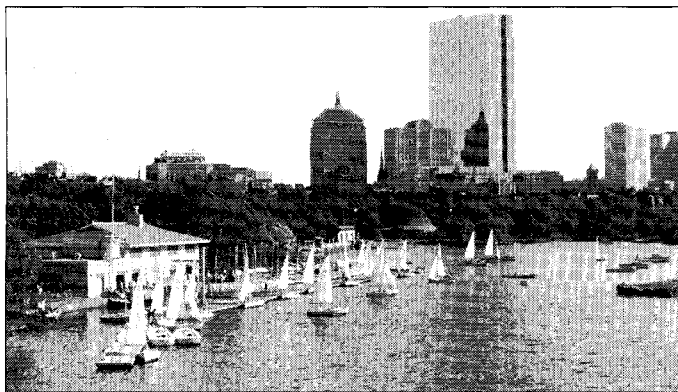
The second paragraph of the "1997 National Inventors Hall of Fame: The Year of the Computer" article on page 9 of the April issue should have stated that six inventors have previously been inducted into the National Inventors Hall of Fame in the field of semiconductor devices & technology. Dr. Robert N. Hall, inventor of the semiconductor laser diode, should have been included in the list of inductees.

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Upcoming Technical Meetings

1998 IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop (ASMC)



"Semiconductor Manufacturing: Meeting the Challenges of the Global Market Place" is the theme of the 9th Annual IEEE/SEMI Advanced Semiconductor Manufacturing Conference and Workshop (ASMC), to be held September 23-25, 1998 at The Copley Plaza, Boston, MA, USA. ASMC continues to be the most respected manufacturing conference in the semiconductor industry, offering practical solutions on improving the semiconductor manufacturing process. Technical abstract submissions for the conference increased again this year, with over 90 peer-reviewed papers selected for presentation in 14 sessions, including an international perspective session. The ever popular poster reception on Wednesday evening encourages interaction between poster authors and other conference attendees. Individual session themes include: Yield Modeling & Analysis; Overall Equipment Efficiency; Yield Enhancement Strategies & Techniques; Harnessing & Developing Workforce Potential; Contamination Free Manufacturing; Advanced Metrology; Cost Reduction; Advanced Processing - Photo & Etch; Advanced Processing - A New Era of Interconnect Technology; Factory Automation - WIP Management; Advanced Processing - Isolation and Dielectric Issues at 0.18 micron; and, Factory Modeling - Simulation. Conference attendees will be asked to vote for the ASMC best paper award, which will be presented at next year's conference.

This year's ASMC features three keynote speakers. James Hines, Principal Analyst and Lead, Semiconductor Contract

Manufacturing, Dataquest, Inc., will discuss the semiconductor industry and wafer fab equipment and the status of the global semiconductor market. Don Brooks, Chief Executive Officer of UMC Group International, will present information on the globalization of semiconductor technology and manufacturing, the success of the foundry model and the future of fabless semiconductor companies. Tony Stamper of IBM Microelectronics will present "Sub 0.25 Micron Interconnection Scaling: Damascene Copper versus Subtractive Aluminum." ASMC will also feature an interactive user-supplier panel discussion, including topics such as 300 mm and industry maturation.

ASMC, through the efforts of over 70 committee members from leading semiconductor and semiconductor equipment and materials companies, as well as academia, has grown into a unique national and international venue for the exchange of information between semiconductor manufacturing professionals. The industry's oldest, continuing advanced semiconductor manufacturing conference continues to grow in attendance, drawing speakers and attendees throughout the United States and worldwide.

This year, ASMC moves across the Charles River to Boston's landmark Copley Plaza in the city's historic Back Bay. The Copley Plaza is within minutes of Boston Common, Fenway Park, Copley Place and Hancock Tower, and a short distance from historic Quincy Market, Faneuil Hall and the new Fleet Center.

(continued on page 4)

BCTM *(continued from page 1)*

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 the following areas: improved BJT models, device, process and circuit simulation software, behavioral modeling techniques and tools, RF simulation techniques and tools, power and thermal simulation, interconnect and package simulation, modeling of passive components, process monitoring and control, statistical modeling, and parameter extraction. The Process Technology session is intended to address: 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 final session of Power Devices will contain papers on discrete and integrated bipolar/BiCMOS power devices and high-voltage ICs, automotive electronics, disc drives, display drives, power supplies, electric utility, medical electronics, motor controls, regulators, amplifiers, converters and aerospace electronic applications, BiCMOS circuits for controlling power devices, CAD and modeling of power devices, and packaging of power devices.

Minneapolis features many beautiful parks and lakes. One can rent a canoe or go running on a jogging path at one of the many lakes. Minneapolis is also the home of the largest fully enclosed retail

(continued on page 4)

1998 IEEE International Silicon-on-Insulator Conference (SOI)



The 24th International SOI Conference, sponsored by the IEEE Electron Devices Society, will be held at the Indian River Plantation Marriott Resort on Hutchinson Island in Stuart, FL from October 5-8, 1998. The purpose of the conference is to provide a forum for presentation and discussion of cutting edge silicon-on-insulator (SOI) technologies and their applications. A short course on SOI technology will be held on October 5th, 1998, and will encompass issues ranging from SOI substrate material processing to advanced circuitry applications and modeling. A most important part of the Conference is the large number of high quality con-

tributed papers (October 6-8, 1998), submitted by research and application groups from around the world. The conference papers and associated poster session will feature talks and presentations regarding SOI material formation (manufacturing, formation, characterization) and circuit applications (low power, high-voltage, high temperature, microwave, analog/linear, radiation hard, high speed, etc.). Papers on new SOI device structures, modeling, reliability, process integration of SOI devices and circuits, and alternate SOI materials efforts are also solicited. The late news deadline is August 15, 1998, and will feature important late breaking feature articles on SOI technology. It should be sent to: All About Meetings, P.O. Box 209 or 1302 Amethyst Street #A, Redondo Beach, CA 90277; TEL: (310) 316-5153.

The IEEE International SOI Conference is the pre-eminent conference in the field of silicon-on-insulator technology. The subjects for the invited talks of the Plenary Session for this year's Conference are drawn from three of the most important current topics in today's SOI industry: SOI circuit design (Kent Chung), Device scaling (Chenming Hu), and the Application of SOI as a mainstream IC technology (Alberto Adan). In addition, an informal discussion session on the evening of October 7th will be held to provide leading manufacturer and end user perspectives on the growth of SOI technology. For further information on the conference content, contact

our Technical Program Chair, Ted Houston, at TEL: (972) 995-9131; E-MAIL: ted-houston@ti.com.

The natural beauty of Hutchinson Island, FL, provides a wonderful backdrop for our 1998 International SOI Conference. At the Indian River Plantation Marriott Resort, a variety of activities such as golfing, tennis, fishing, shopping, ocean swimming, waverunning, and boating are offered for your enjoyment. With AAA four diamond award accommodations (200 guest rooms and 105 waterfront villas), the resort also offers children's activities for those traveling with families. Located on the property are nine restaurants and lounges which will satisfy a wide range of discriminating palates. For further information on the resort, call 1-800-947-2148 or (561) 225-3700.

From Palm Beach International Airport, take Florida's Turnpike to Exit 133, following Martin Down Blvd./Monterey Rd. to East Ocean Blvd. (A1A), crossing the intracoastal waterway to Hutchinson Island and the Indian River Plantation Marriott Resort.

For more information on the conference, please visit the conference website at <http://www.he.net/~meeting/soi98.html>. On behalf of the 1998 IEEE International SOI Conference Committee, we look forward to seeing you at Hutchinson Island, FL!

Dr. Lisa P. Allen
Ibis Technology Corporation
Danvers, MA

BCTM *(continued from page 3)*

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.

Interested parties can contact the BCTM Conference Manager, Janice Jopke at CCS Associates, 6611 Country-side Drive, Eden Prairie, MN 55346; TEL: (612) 934-5082; FAX: (612) 934-6741; E-MAIL: jjopke@aol.com.

Thomas Skaar
VTC Inc.
Bloomington, MN

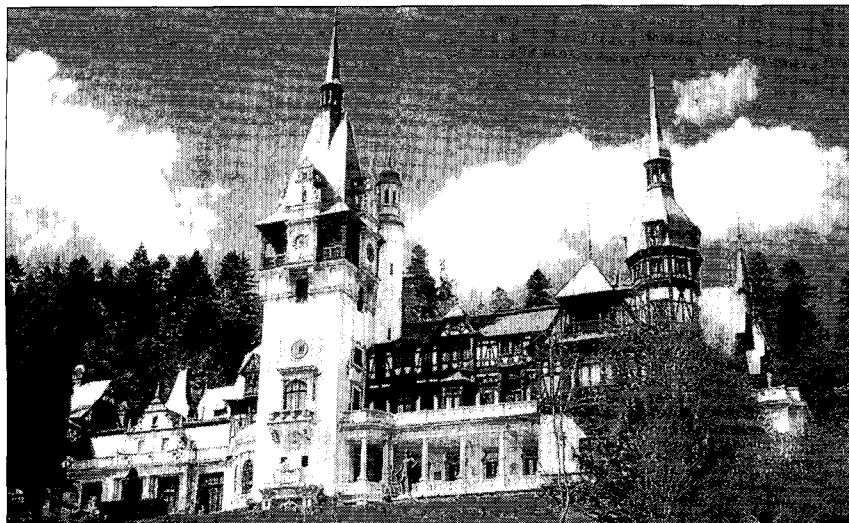
ASMC *(continued from page 3)*

September in Boston offers visitors with an opportunity to sample one of nature's most colorful events, viewing the change of foliage along the river front paths. Boston epitomizes the essence of the American spirit, offering the sophistication of a rich cultural heritage along with the excitement of a lively harbor city. New England's high tech, cultural and historical heart offers visitors a wide range of attractions, including a chance to sample the region's best seafood. This is a perfect time to bring along your family, extend your stay and have some fun before or after the conference. The conference ends early on Friday afternoon, to allow time to meet informally and to enjoy Boston.

Who should attend ASMC? Semiconductor professionals involved in production control, process control, process transfer, yield and cycle time improvement, cost reduction, preventive maintenance, line supervision, facilities fab operation, CIM, quality, training and education. For registration and general information on ASMC 98, please contact Margaret Kindling at SEMI, 805 15th St. NW, Suite 810, Washington, DC 20005, USA, TEL: (202) 289-0440; FAX: (202) 289-0441; E-MAIL: mkindling@semi.org. or visit SEMI Online at www.semi.org.

Kimberly Conway
Alpha Semiconductor
Woburn, MA

1998 International Semiconductor Conference (CAS)



The 1998 International Semiconductor Conference (CAS'98) will be held October 6-10, 1998, at the "Sinaia" Hotel in the mountain resort Sinaia, Romania. The conference is organized by the National Institute for Research and Development in Microtechnologies (IMT-Bucharest) - Romania, co-sponsored by the IEEE Electron Devices Society, under the aegis of Electrochemical Society Inc., Romanian Academy, Romanian Ministry of Research and Technology, IEEE Romania Section and ED Romania Chapter.

The International Semiconductor Conference began in Romania in 1978 as the Annual Semiconductor Conference (CAS) (former title), and became an annual national scientific event. Political changes in Eastern and Central Europe in 1989 led to the opening of the conference to the free world of science and technology. Every year since 1991, CAS has been bringing together about 200 participants from Europe, Asia, Africa and the USA who together present 100-130 papers annually, published (in English) in the CAS Proceedings. The total number of the contributed papers in the past seven CAS editions increased from 70 in 1991 to 118 in 1997 and the weight of the foreign papers followed a growing trend from 1991 to 1997.

In the last seven years CAS became a representative conference in the field of semiconductors and microsystems in Central and Eastern Europe. Famous scientific authorities recognized the importance of the conference and many accepted to become members of the CAS International Advisory Committee.

Topics

CAS intends to provide a forum for presentation and discussion of the main achievements in physics, design, technology and application of solid-state devices and materials. The aim of the conference is to bring together scientists and engineers actively engaged in the front of solid-state devices and technologies.

Papers are solicited in the following areas: semiconductor device physics and technology (device modeling and simulation, silicon and compound semiconductor devices, heterostructures, advanced materials and processes, reliability and defect engineering); IC's design and system integration (low voltage-low power IC's, device interconnect technology, monolithic, multi-chip and hybrid ASICs, testing and reliability); microstructures and microsystems (surface and bulk micromachining, microengineering techniques, electro-opto-mechanical microsystems, microsensor and actuator integration, signal processing and system interfacing), with particular emphasis on: power devices and IC's, nanotechnologies and quantum devices, novel microwave devices and circuits, new materials for microsystems, chemical sensors and biosensors.

Technical Program

The CAS'98 Program consists of ten invited papers presented in two plenary sessions and 100-120 contributed papers (structured in oral or poster sessions and presented simultaneously in three conference halls). Special awards will be awarded for the best paper in each session. The program will include a Student Papers Ses-

sion. The best student paper is to be awarded by the ED Romania Chapter.

Contributed papers (Deadline was April 15) are selected on the basis of a submitted extended abstract (4 pages A4, two columns), written in English. Both invited and contributed papers will be published in the CAS'98 Proceedings, and will be available for all participants on the first day of the conference. Late News Articles are accepted until August 30.

Some of the CAS'98 invited speakers will be: Dr. Jumana Boussey, LPCS-CNRS, France ("SOI-Based Technology for Optical Waveguides Integration"), Prof. D. Flandre, Univ. Catholique de Louvain, Belgique ("Thin-Film Fully-Depleted SOI CMOS Technology, Devices and Circuits for LVLP Analog/Digital/Microwave Applications"), Dr. D. Lapadatu, Sensonor asa, Norway ("Building Mechanical Sensors by Bulk Micromachining and Anodic Bonding"), Prof. J.J. Liou, Univ. of Central Florida, USA ("Base Current Instability: a Major Concern for the AlGaAs/GaAs HBT Reliability"), Prof. M.K. Sheinkman, Inst. of Semiconductor Physics, Ukraine ("Ultrasound Treatment as a New Way for Defect Engineering in Semiconductor Materials and Devices"), Dr. L. Teres, CNM, Spain ("Reconfigurable Hardware Design"), Dr. A. Wild, Motorola, USA ("Modeling and Simulation Challenges for Microsystems").

Location

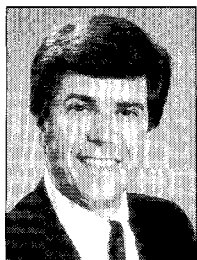
The CAS'98 Edition will also be held this October at Sinaia, "the Pearl of the Carpathian Mountains", located at about 120 Km North-West from Bucharest, Romania. Sinaia, the traditional place where CAS is held, is an exciting mountain resort, offering a magnificent autumn view during the conference. The participants can tour the splendid Swiss-like town, with its famous Peles Castle and the renowned Casino, and can also make trips in the mountains. We strongly recommend that you attend CAS'98 and schedule this scientific event in your plans for 1998. You definitely will not regret it!

For further conference information, please contact the CAS Secretariate, Ms. Doina Vancu, IMT-Bucharest, Str. Eroulanu Nicolae 32B, Sector 2, 72996 Bucharest, Romania, TEL: +40-1-230.14.48 (+40-1-231.30.40); FAX: +40-1-230.14.48 (+40-1-230.75.19); E-MAIL: cas@imt.ro; <http://www.imt.ro/CAS>.

Doina Vancu
IMT-Bucharest
Bucharest, Romania

Society News

Outgoing President's Message



Louis C. Parrillo

In the two years that have elapsed since I initially wrote in this column as the incoming EDS President, our society has benefited substantially from the more intense and global participation of the international membership of our society. During my tenure as Society President I have been honored greatly by interacting with the many active leaders that serve the society membership with their creativity, dedication and hard work.

As promised, I would like to look back over the last two years and examine what we have done and how well we have executed to the goals that we established for the 1996 - 1997 time frame. With the participation of the AdCom and other society members, we instituted a methodology of developing a set of key goals for our society for the 2-year time frame, and we measured our progress to these goals on a semi-annual basis. In this outgoing message, I would like to briefly review our progress to achieving these goals. The credit for the very substantial progress of our society goes to the many dedicated leaders and members of our teams who have championed these goals.

AdCom Related Goals

The most significant change has been the expansion of our five single-person AdCom Standing Committees, namely: Chapters, Education, Meetings, Membership and Publications. The intent of expanding the committees was to generate new ideas, share the burden of tasks among several individuals, to provide potential AdCom members an opportunity to contribute prior to being considered for election and to help develop the future leadership for our society. We added international membership to each of the standing committees and recently we also included students and young engineers as members to stimulate new ideas from our younger members. Each of the committees has developed a set of detailed goals and plans that are driving excellence in the thrusts of each of the standing committees.

In a similar vein, we revamped our Technical Committees, some of which had been active and some of which had not. We re-appointed three chairs and appointed eight new chairs. Our Technical Committees now include Compound Semiconductor IC's, Displays, Electronic Materials, Microelectromechanical Systems, Optoelectronic Devices, Photovoltaic Devices, Power Devices and IC's, Semiconductor Manufacturing, and Vacu-

um Devices. A substantial addition to our society was the transfer of the Reliability Physics Group from the Reliability Society to EDS. With the intent of strengthening our focus on the increasing technical challenges of device-reliability issues, we created the new Device Reliability Physics Technical Committee, which is comprised of members of the former Reliability Physics Group as well as other EDS members. Another new thrust has been to create a joint effort with the newly established Solid-State Circuits Society in a VLSI Technology and Circuits Technical Committee. Overall, we appointed eighty-eight new members to these eleven new Technical Committees, and we have high expectations that they will seek out and bring to the forefront the new issues and challenges in each of their respective thrust areas.

Membership Related Goals

In addition to creating an expanded effort in this area, some of the goals related to serving and increasing our membership include the formation of a "permanent EDS membership" which allows members to pay a one-time nominal lifetime fee for membership. To more effectively recruit international membership, EDS brochures have been prepared in different languages. To date, brochures have been created in Mandarin and Japanese, and there will be more to follow. We are planning to get an assessment of how well our society serves our membership and how we can improve; however, the details of such a survey are still being developed. For the first time we have created a comprehensive EDS Membership Directory that provides detailed Society, member and chapter information. Overall, our society has grown in the last two years. However, because of the focus on international recruitment and chapter formation, the growth has been outside of the U.S. To regain and to grow our U.S. membership, we plan to utilize some of the same techniques that have proven to be so successful in our international efforts.

Message from the Editor-in-Chief *(continued from page 2)*

reports. He has been awarded three U.S. patents and has two more pending. In the IEEE, he serves as a program evaluator for ABET. His College and Department activities have included serving in the following roles: Engineering Faculty Advisory Committee (EFAC) as Vice-Chair, a member of the Microelectronic Task Force, the ABET Coordinator for the EE Department, a member of the EE Department Curriculum Committee, and Chair of the EE Department Graduate Studies Committee. At the University level, he has served on the Faculty Senate and has served on the Research Committee, Academic Affairs

Committee, Planning Committee and Budget Committee. He has been awarded the Eta Kappa Nu Outstanding Professor Award in 1987, 1991 and 1996, the General Dynamics Excellence in Engineering Teaching Award in 1989, the Tencoco Award for Meritorious Teaching of Engineering in 1993, the Halliburton Foundation Professorship in 1995, the Kunze Prize in 1997 and the International Programs Award for Excellence in 1997.

Krishna Shenai

The University of Illinois at Chicago
Chicago, Illinois

Chapter Related Goals

One of the most effective thrusts in this area has been the enhancement of our Distinguished Lecturer Program. From a single Lecturer several years ago, we expanded our cadre of Distinguished Lecturers to include all AdCom members as well as other volunteers. Recently, we expanded our efforts by selecting regional Lecturers outside the U.S., so that international chapters can benefit more frequently from this highly popular chapter activity. We've continued to expand our Eastern European initiative to create and sponsor new chapters in cooperation with the Microwave Theory and Techniques Society. This effort has been immensely successful and is serving as the model to develop new chapters in Latin America as well as in the U.S. Having created tens of new chapters worldwide, the challenge moving forward is to help them become and remain vital to our members. With this objective in mind, a new Chapter Partners Program has been established in which AdCom members, Committee Chairs and other senior members are serving to coach and mentor chapters worldwide.

Publications Related Goals

The major thrusts here are focused on cycle-time reduction and the timely availability of technical information. The most significant efforts to meet these objectives have come about by our drive to electronic publication. We have implemented our first fully electronic *Journal of Technology Computer Aided Design*, an electronic version of the *Electron Device Letters* (EDL) and the *Transactions on Electron Devices* (T-ED), as well as having developed an annual CD ROM Package which includes EDL, T-ED and the proceedings of IEDM. In addition to the major thrust in electronic and on-line publications, we are planning to attack the cycle time of the manuscript review process with additional support from the Executive Office.

Our society continues to be very strong financially, owing to the high degree of planning and discipline in running our conferences, and in managing our expenses. Based on our sound financial status, we can continue to seek opportunities to invest in future services for our membership.

I have immensely enjoyed serving EDS, and I would like to thank all of those members who have helped me serve our membership. First and foremost I would like to thank Bill Van Der Vort for his incredibly capable assistance in managing the many duties of the office. His leadership in strategic and tactical issues has advanced our society immensely. Bill and his assistants, Laura Riello, Amanda Ferraioli, Carrie Lin and Jeannette Mayo, are really responsible for running your complex society. They have been a joy to work with. I also wish to express my deep appreciation to our former President, Dexter Johnston, for his continued and proactive assistance in leading our society.

It is very rewarding to participate in the many varied efforts of our society. We encourage your active participation in continuing to make our society one of excellence in international technical education and communication.

I have been very proud to serve you. Thank you.

Louis C. Parrillo
Motorola, Inc.
Austin, TX

President's Message - EDS Goals for 1998 and 1999

I am pleased to write to the EDS membership as the incoming society president. I am honored to have this job and hope that I can contribute as much to the society as my predecessors. The primary mission of the society is to serve its membership. The structure of the EDS leadership team, the administrative committee (AdCom) is intended to reflect that mission. Within AdCom we have committees to cover the major activities of the society. These are Chapters, Education, Meetings, Membership and Publications. The committees run the major technical activities of the society - meetings and publications. They are also responsible for supporting our chapters, running our Distinguished Lecturer Program and expanding our membership. In addition to these committees, we also have 11 technical committees. When some new technical area arises, it is the job of the technical committees to make sure that the Society is active in that area with publications, meetings, etc. In the past year, AdCom has been very active in expanding the technical committees, so we have an army of volunteers who want to make things happen for EDS. That brings me to the goals we have set for this year and next.

I'll talk about the goals from a strategic point of view. Let me begin by discussing ongoing thrusts in the society. For several years the society has been focused on globalization. We have worked to expand our chapters abroad, increase the number of meetings outside the U.S. and globalize the AdCom membership. This effort is paying off. Membership in Regions 8 and 10 (Europe and Asia) is growing much faster than total membership, so our efforts in globalization must continue and expand.

A second thrust has been chapter support. We want to serve EDS members not only through society activities, but also to facilitate regional and local activities. To that end, we have also worked to expand the number of EDS chapters. Our efforts in this area will also continue.

Another thrust is quality. Let me first say that I am very proud of the quality of EDS activities. Our publications and meetings are first rate. But that does not mean that we cannot continue to improve. In the spirit of continuous improvement, we have long tracked the currency and impact factor of our publications. And we have improved over time. For meetings,

we hold workshops for organizers to share best practices. We can do more - and we will.

Finally, I want to discuss a new area of focus for the society. And this one is not just an EDS focus, but an IEEE focus. We need to expand our impact on the practicing engineer. By practicing engineer I mean engineers not involved in research or development. To do this successfully, we will need new ideas and people on the AdCom. The first step in this process is the establishment of a new committee to organize short courses. From our experience in the past with short courses, we know that they are popular with practicing engineers. So we will try that first. Other ideas would be welcome.

I'll say it again. The goal of the society is to serve the membership. We have a structure that functions well to achieve that goal. We have four strategic thrusts - globalization, chapter support, quality and the practicing engineer. Simple. But we need ideas and help. If you have ideas, drop us a line. I can be reached at b.griffing@ieee.org.

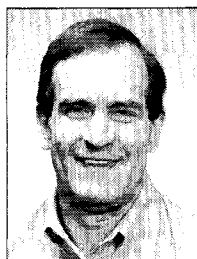
Bruce F. Griffing
GE Corp. Research & Development
Schenectady, NY

EDS Officer & AdCom Election Results & Profiles

On December 7, 1997, 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.

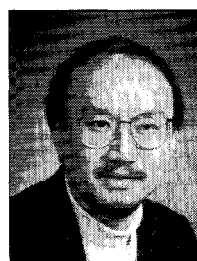
I. OFFICERS

The following individuals were elected as officers for a one-year term beginning 1/1/98:



Bruce F. Griffing

BRUCE F. GRIFFING (President) is the Manager of the Industrial Electronics Lab at the GE Corporate Research and Development. He received a B.S. degree in Physics from Miami University in 1972, and a Ph.D. from Purdue University in 1979. He joined the GE Research and Development Center in 1979, and has worked on MOS device physics, optical lithography, CMOS process development and active matrix displays. He presently manages a group responsible for imaging detectors for medical and NDE applications. He was Chair of the IEDM, EDS Meetings Chair from 1991 to 1996 and EDS Vice President for 1996 and 1997.



Cary Y. Yang

CARY Y. YANG (Vice 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 Microelectronics Laboratory at Santa Clara.

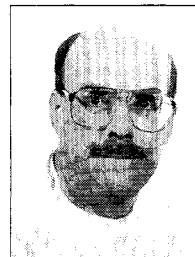
Dr. Yang has been a consultant to many industry and government laboratories, and a visiting professor at the University of Tsukuba and the University of California, Berkeley. He is a Senior Member of IEEE, and a member of the Materials Research Society. He has been serving as the Regions/Chapters Chair and Vice President of the IEEE Electron Devices Society. He is currently an editor of the *IEEE Transactions on Electron Devices*, an author or co-author of over 100 journal and conference publications, 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.



Lucian A. Kasprzak

LUCIAN A. KASPRZAK (Treasurer) is the Director of Reliability at Sterling Diagnostic Imaging. He received a B.S. degree in Physics from the Stevens Institute of Technology in 1965, a MS degree in Physics from Syracuse University in 1970, and a Ph.D. in Materials from the Stevens Institute of Technology in 1972. He joined IBM in 1965, working on failure analysis, MOS and bipolar process development, and VLSI reliability. He has held positions as Reliability Manager, Senior Engineering Manager and Program Manager. He received IBM awards for the discovery of the hot electron effect (1974), and development of a reliable low barrier Schottky diode (1980). In 1992, he joined the faculty of Franciscan University. In 1996, he joined Sterling Diagnostic Imaging, Inc. He is Chair of the EDS Device Reliability Physics Committee and Treasurer of *Transactions on Semiconductor Manufacturing*. He has served as General Chairman and Technical Program Chairman for IRPS. He has 34 publications and 3 patents. He is Fellow of the IEEE.

JOHN K. LOWELL (Secretary) received the Ph.D. in Applied Physics from the University of London. He has held technical and managerial assignments for United Technologies, Northern Telecom, Mostek, Texas Instruments, British Telecom/Dupont, AMD and Applied Materi-



John K. Lowell

als. He has also been Professor at Texas Technical University and in the University of Texas system, and has 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 LEOS and CAS societies. For the past thirteen years, he has been the Associate Editor-in-Chief of the IEEE Division I *Circuits & Devices Magazine*, and has been its Guest Editor twice.

II. ADCOM MEMBERS-AT-LARGE

A total of seven persons were elected to three-year terms (1998-2000) as Members-At-Large of the EDS AdCom. Three of the seven persons were re-elected for a second term, while the other four individuals were first-time electees. The backgrounds of the electees span a wide range of professional and technical interests.

SECOND TERM ELECTEES:



Herbert S. Bennett

HERBERT S. BENNETT is a Senior Research Scientist and an Executive Advisor in the Electronics and Electrical Engineering Laboratory of the National Institute of Standards and Technology, Gaithersburg, MD. He received B.A. and Ph.D. degrees from Harvard University and a M.S. degree from the University of Maryland. He has held management and other research positions at NIST and was the Director of Materials Research at the National Science Foundation from 1978 to 1980. He received Maryland's Outstanding Young Scientist Award for 1970 from the Maryland Academy of Sciences. He has written

over 100 archival publications on such topics as magnetic phase transitions, the Faraday effect, color centers in ionic crystals, and damage mechanisms in laser materials. His present research interests include semiconductor device physics, optoelectronics, and digital video technologies. He was the Chairman of the 1994 NUPAD and helped unify NUPAD, VPAD, and SISDEP to become one international meeting called SISPAD. He is a Fellow of the IEEE and is the Chairman of the new EDS Technical Committee on Compound Semiconductor ICs.



Hiroshi Iwai

HIROSHI IWAI is a chief specialist of the Microelectronics Engineering Laboratory, Toshiba Corporation, Kawasaki, Japan. He received the B.S. and Ph.D. degrees in electrical engineering from the University of

Tokyo in 1972 and 1992, respectively. He joined Toshiba in 1973. Since then, he has been engaged in the research and development of Si-LSI technologies. He is now in charge of the development of next generation telecommunication LSIs and also the research of the future Si-LSI limitation. His awards include: Local Commendation for Invention from the Japan Institute of Invention & Innovation (1990), Grand Prize of Nikkei BP Technology Awards (1994), and the IEEE EDS Paul Rappaport Award (1994). He is a Fellow of IEEE.



Kunio Tada

KUNIO TADA is a Professor at the Division of Electrical and Computer Engineering, Yokohama National University, and a Professor Emeritus of the University of Tokyo. He received his Ph.D. from the latter uni-

versity in 1965 and had worked for the university for 33 years until last March. He served as President of the Japan Society of Applied Physics from March 1996 – March 1998. He was an Editor of *IEEE Transactions on Electron Devices* from 1993 to 1996, and an Elected Member of EDS AdCom from 1995 to 1997. He was elected an IEEE Fellow

for his contributions to semiconductor photonic and electronic devices including optical directional-coupler switches, distributed-feedback lasers, and Schottky-clamped transistors.

FIRST-TIME ELECTEES:



Ilesanmi Adesida

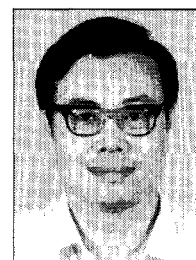
ILESANMI ADESIDA received his Ph.D in Electrical Engineering from the University of California, Berkeley in 1979. From 1979 to 1984, he worked at the Cornell Nanofabrication Facility and the School of Electrical Engineering, Cornell University. He was the Head of the Electrical Engineering Department at Tafawa Balewa University, Bauchi, Nigeria from 1985 to 1987. In 1987, he joined the University of Illinois at Urbana-Champaign, where he is currently a Professor of Electrical and Computer Engineering and an Associate Director of the Center for Compound Semiconductor Microelectronics. His research interests are nanoelectronics and high speed devices and circuits. He has served on the organizing committees of several conferences and also served as an Associate Editor of the *Journal of Electronic Materials*. He was awarded the Oakley-Kunde Award for Excellence in Undergraduate Education in 1994 and was named a University Scholar in 1997.



Arlene A. Santos

ARLENE A. SANTOS has been involved in silicon IC technology development and manufacturing for 15 years. Upon graduation from MIT, she worked in CVD and photolithography process development at Harris Semiconductor. She was a lead integration engineer in visible sensor technology development at Westinghouse Electric Corporation. Arlene is currently at National Semiconductor Corporation where she manages an engineering staff responsible for design verification and modeling, statistics and quality assurance, functional test, and failure analysis. She has co-authored several technical publications on design, fabrication and characterization of

CCDs. She is actively involved in the EDS, serving as the Semiconductor Manufacturing Technical Committee Chair and a member of the Education Committee, EDS Baltimore Chapter, and the ISSM Program Committee.



S.C. Sun

S.C. SUN is the Director of R&D Advanced Module Technology at Taiwan Semiconductor Manufacturing Company (TSMC). He received his Ph.D. degree in Electrical Engineering from Stanford University.

His research interests include CVD metalization, high dielectric constant materials for DRAM applications, low dielectric constant materials, and ultrathin gate dielectrics by rapid thermal processing. He has worked at HP, AT&T Bell Labs, and AMD for 16 years in the U.S. He returned to Taiwan in 1991 to build National Nano Device Lab as the Deputy Director. In 1996 he joined TSMC. Dr. Sun has served on various technical committees of IEDM, ECS Meeting, Microprocesses and Nanotechnology Conference (Japan), IEDMS and VLSI-TSA (Taiwan).



Paul K.L. Yu

PAUL K.L. YU received his Ph.D. from the California Institute of Technology in 1983. Since 1983, he has been with the Department of Electrical and Computer Engineering at the University of California, San Diego (UCSD). In 1993, he became a professor of Electrical and Computer Engineering at UCSD. His research interests include integrated opto-electronic devices and high-speed modulation; transparent photonic networks; high linearity waveguide modulator and detector devices; novel modulation schemes; optical chaos, and photonic band structures. He is a member of the Optical Society of America and a Senior Member of IEEE. He is an editor of the EDS Newsletter, an EDS Chapter Partner and an EDS Distinguished Lecturer.

Louis C. Parrillo
Motorola, Inc.
Austin, TX

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 1998, the election will be held after the AdCom meeting on Sunday, December 6th. Electees begin their term in office on January 1, 1999.

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

Please send your nominee's name, address, and supporting information to the EDS Executive Director, W.F. Van Der Vort (see page 2 for contact information) in time to be received by the deadline of October 23, 1998. It is very desirable that submissions include a biographical summary in a standard two-page format. The EDS Executive Office can provide you with an example of the format. If you have any questions regarding the nomination requirements or process, feel free to contact the Nominations and Elections Chair, Louis C. Parrillo (see page 2 for contact information).

The EDS/ECS Agreement and Letters Announcement



April S. Brown

Electrochemical and Solid-State Letters is a new paper and electronic publication that will be jointly published by the IEEE Electron Devices Society and the Electrochemical Society (ECS). The July 1998 issue will be the 'inaugural' issue

for the new journal. In addition to the paper and electronic versions, Letters will also be available in microfiche.

Of particular interest to EDS members is the journal focus on the critical area of electronic materials processing for device applications. This will complement our existing IEEE EDS publications and improve the technical scope of materials offered to the membership. In addition, the new journal will push the limits on rapid turn around offered by electronic publishing. The journal will meet an 8 week time from submission to publication schedule electronically with a 12 week maximum for the paper publication.

The journal editor is Paul Kohl, current editor of the *Journal of the Electrochemical Society* (JES). The letters journal will replace the letters section of the JES. A letters advisory board with members from both ECS and EDS has been formed. Jerry Woodall, Dexter Johnston, and April Brown will represent IEEE/EDS on the board at the journal initiation.

For 1998, EDS will be offering its members a half-year subscription to the paper or microfiche edition of Letters at

a cost of \$12 (\$9 for students). In addition, the premiere six issues will be available free to anyone who has access to the World-Wide Web at <http://www.electrochem.org/letters.html>. It is expected that any EDS member who subscribes to the Letters journal for the second half of 1998 will be automatically billed for a 1999 subscription this Fall.

For the 1999 billing cycle, the member price for a full year subscription to the paper or microfiche edition of Letters will be \$24 (\$18 for students). On-line access to Letters will be provided free to all EDS members, regardless whether they subscribe to the paper or microfiche edition. EDS members will use the OPeRA System as the means to link to the EDS site to access the on-line version of the publication.

Also for 1999, Letters will be made available to non-members in the print or microfiche version at a cost of \$250. This publication will not be included in the All Society Periodicals Package or the IEEE/IEE Electronic Library.

Coordination of the journal content with current content in *Electron Device Letters* (EDL) will be an important function of the advisory board. We hope to develop a thriving set of complementary journals to best serve the community. If you would like to subscribe to the new Letters, please contact the Executive Office (see page 2 for contact information).

April S. Brown

Georgia Institute of Technology
Atlanta, GA

EDS Chapter Partners Program Activities

The following is an account of the recent interactions of the EDS Chapter Partner, Hiroshi Iwai, with two of his assigned chapters, RL/CPMT/ED Singapore and MTT/AP/ED Finland.

Meeting with the RL/CPMT/ED Singapore Chapter

The Chapter Partner meeting was held on January 9, 12:00 – 9:00 p.m. at the National University of Singapore (NUS).

The program included the following:

1. Introduction of NUS activity by Profs. Daniel S.H. Chan, W.K. Kin, C.H. Lin, W.K. Choi

2. Distinguished Lecture by H. Iwai on "CMOS Scaling below 0.1 μm "

3. Meeting with the Chapter Committee Members (titles are as of January, 1998)
Chairman: Prof. Daniel S.H. Chan, National University of Singapore;
Deputy Chairman: Dr. M.K. Radhakrishnan, Institute of Microelectronics (IME);
Committee members: Dr. Soon Huat Ong, National Semiconductor, Dr. Philip Ho, Lucent Technologies, Dr. Wai Kin Chim, National University of Singapore;
EDS Partner: H. Iwai

The RL/CPMT/ED Singapore Chapter consists of more than 220 members, includ-

ing approximately 120 ED members. The number of ED members is the 3rd largest in Region 10, next to the ED Taipei Chapter which has more than 230 members. Considering the population of Singapore is about 3 million, the number is quite large. The joint chapter is supported by the high activity of university and industry members.

The meeting of chapter committee members continued until dinner. H. Iwai explained the organization and service of EDS, and the purpose of the newly started EDS Chapter Partners Program. Then Prof. Chan introduced the status and activity of the chapter. At this time, most of the Singa-



Left to right: 1st row: H. Iwai, D. S. H. Chan, 2nd row: M. K. Radhakrishnan, S. H. Ong, P. Ho, W. K. Chim.

pore microelectronics industries are focused on assembly lines and reliability R & D, while physical & failure analysis and packaging are currently at Singapore's strongest. As an educational activity, the chapter organizes a Short Course series jointly with the IEEE Singapore Section, CIS-FAR (Center for Integrated failure Analysis and Reliability) and NUS. IME sponsors it.

In order to offer the opportunity to exchange information in the field, the chapter initiated the International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA) with the IEEE Singapore Section in 1987. The symposium is technically co-sponsored by IPFA, and the 6th IPFA held in July 1997 was reported in the January 1998 issue of the EDS Newsletter. Regarding packaging, the chapter started the Electronic Packaging Technology Conference (EPTC) in October 1997.

IPFA is one of the most important international activities of the chapter.

Based on this, the chapter would like to have a special issue on Reliability in the *IEEE Transactions on Electron Devices*. H. Iwai will send Prof. Chan a copy of his previous proposal for the special issue on Process Integration and Manufacturability. In the future, the chapter hopes to rotate the venue of the IPFA in Region 10, sometimes outside of Singapore.

Although the chapter already offers sufficient educational opportunities to the members through the short course series of reliability, failure and physical analysis, and packaging, the distinguished lectures are very much appreciated. In order for the lectures to catch the attention of regional chapters, it is desirable to prepare a list of the DL (distinguished lecturer) visitation schedule for each chapter (including neighbor chapters). H. Iwai proposed this at the June AdCom meeting. At this moment, there is only one DL from the Singapore chapter. Prof. Chan will propose several DL candidate names to

the EDS Executive Office.

Meeting with the MTT/AP/ED Finland Chapter



K. Nikoskinen & H. Iwai

The Chapter Partner meeting was held on February 9, 10:00 a.m. – 12:00 p.m. at the Helsinki University of Technology, Espoo, Finland. The program included the following: After H. Iwai gave an explanation of the organization & service of the EDS and the newly started EDS Chapter Partners Program, Prof. K. Nikoskinen introduced the chapter.

The MTT/AP/ED Finland Chapter consists of more than 120 members including more than 54 MTT, 54 AP and 16 ED members. The number of the ED members is relatively small compared with 80 ED members in Sweden. Seventy percent of the chapter members are from the

southern coast of Finland, Espoo, Helsinki, Salo and Turku. Espoo, home of Helsinki University of Technology (HUT), is located west of Helsinki. Salo, home of Nokia Mobile Phone, is located further west of Helsinki. About twenty-five percent of chapter membership is from the Tampere area which is located 150 KM northwest of Helsinki. A university and a technical university are located there. The remaining 5 percent of the members are from the Oulu area, which is located 500 km north of Helsinki.

The major interest of the joint chapter members is mobile telecommunication technologies activated by industry, such as Nokia. The research area of the chair, Prof. Nikoskinen, is antenna theory and he belongs to APS. Vice Chair of the chapter is Dr. Jussi Tuovinen of VTT/Information Technology and his area is MTT. There is no Secretary or Treasurer for the chapter. Lectures are given quite often by visitors to HUT; the distinguished lecturer system is not popular in the chapter.

The two discussion items were given as action points. Prof. Nikoskinen will make an effort to choose one key member from ED probably as another vice chair of the joint chapter to stimulate the ED activity. He and H. Iwai will keep in touch for organizing distinguished lectures in the near future.

Hiroshi Iwai
Toshiba Corporation
Kawasaki, Japan

EDS "Chapter of the Year" Award

At its December 1997 meeting, the EDS Administrative Committee approved a 'Chapter of the Year' Award. It will be given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st - June 30th period. Nominations for the award can only be made by the EDS Chapter Partners. The winning chapter 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	Date
Call for Nominations e-mailed to Chapter Partners	6/1
Deadline for Nominations from Partners	9/1
Regions/Chapters Committee Selects Winner	Mid-October
Award given to Chapter Representative	First week of December (at IEDM)

Cary Y. Yang
Santa Clara University
Santa Clara, CA

Regional and Chapter News

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

ED/SSC Baltimore Chapter

The newly formed ED/SSC Baltimore Chapter launched its inaugural meeting on March 18, 1998, with a presentation from Dr. Steve Hillenius of Lucent Technologies, Bell Labs, entitled: "Challenges and Trends in Silicon Technology for Sub-100 nm", with 20 people in attendance. The Chapter is chaired by Dr. Paul A. Potyraj of Northrop Grumman with Ms. Anna J. Roesch, of National Semiconductor, as Vice-Chair, Mr. David M. Gill, of National Semiconductor, as Secretary/Treasurer, and Ms. Arlene Santos, of National Semiconductor, as Steering Committee Chair.

The second quarterly meeting was held the first week of June, and featured a presentation by Dr. Marvin White, of Lehigh University, on nano-electronics and ultra-low power silicon.

The third quarterly meeting is tentatively scheduled for September 17, and will be given by Dr. Tak Ning, of IBM, discussing the relative merits of SiGe and GaAs.

ED Mid-Hudson Valley Chapter

In addition to its regular monthly meetings with the local IEEE Section, the ED Mid-Hudson Valley Chapter, chaired by Michael Hargrove, of IBM, has focused on several topics for its monthly presentations. A few examples are: "Digital photography"; IBM's Deep Blue Chess Machine; and multi-media projection technology. The chapter was also involved during Engineer's Week in February with displays and presentations for students, and providing judges for the regional Science Fair at Dutchess County Community College.

Report on the First International Conferences on Modeling and Simulation of Microsystems, Semiconductors, Sensors and Actuators (MSM '98)

—by Andreas Wild

The First International Conference on Modeling and Simulation of Microsystems,

April 6 – 8, 1998, Santa Clara, CA, addressed the double challenge of the ULSI era: integration levels coming closer to system complexities, while the cost of experimental facilities is exploding.

In response to this challenge, the Conference provided an interdisciplinary, integrative forum to stimulate cross fertilization in modeling, simulation and scientific computing in microelectronics, semiconductors, sensors and actuators, to stimulate and accelerate the progress of predictive capabilities in microsystem design. MSM98 was attended by about 225 scientists from 30 countries.

Leading experts offered invited talks on hardware/software co-design, on CAD system architectures for microsystems and on modeling microsystems including CMOS, MEMS, optoelectronics and micro-manipulators. The technical program encompassed Bulk and Topography Processing; Characterization, Parameter Extraction, Calibration; Model Development; Discretization, Numeric Methods, Computational Efficiency; Equivalent Circuits, Behavioral and Multilevel Simulation. It also included exemplary applications of modeling and simulation in Microfluids; Pressure Sensing, Actuation, Navigation; Optics and Electromagnetics; Semiconductors; Thermal Modeling.

The program was completed by a very animated poster session and a well attended exhibition of commercially available software for modeling and simulation, including molecular materials modeling, numerical tools and specifications-driven CAD systems.

The Second International Conference on Modeling and Simulation of Microsystems will take place in San Juan Marriott Resort, San Juan, Puerto Rico, on April 19 – 21, 1999. For further information on the conferences, please contact Andreas Wild: TEL: (602) 952-3108; FAX: (602) 952-3232; E-MAIL: tdoc03@email.sps.mot.com. The Home Page of the Conference can be visited at <http://www.iamcm.org/MSM99> or <http://dmtwww.epfl.ch/MSM99>.

Formation of New ED Cuba Chapter

—by Mark H. Weichold

The formation of a new chapter of the EDS

in Cuba, chaired by Dr. Maria Sanchez Colina, was officially approved on February 17, 1998. Its initial membership is comprised of twelve professors of Physics at the University of Havana, all of whom are associated with the Department of Research in Solid-State Electronics. The work of this group deals with semiconductor physics and technology and in particular involves the growth and characterization of semiconductor materials and devices. The group employs molecular beam epitaxy and liquid phase epitaxy to produce thin films of III-V compounds for IR-photodetectors. The group has also investigated and developed AlGaAs lasers as well as silicon solar cells, with the aim to improve the conversion efficiencies. Additionally, the University of Havana researchers are growing polycrystalline II-VI (CdSe) and IV-VI (PbS) thin films and using the Bridgman technique are growing bulk CdZn Te crystals for gamma ray detectors.

The newly formed EDS chapter members are organizing the Second Workshop on Optoelectronic Materials and Their Applications to be held at the University of Havana in November 1998. The meeting is sponsored by several International Organizations: International Union of Pure and Applied Physics (IUPAP), International Centre for Theoretical Physics (ICTPO Trieste, Italy), Latin Center of Physics (CLAF) and the Electron Devices Society, (EDS-IEEE).

The conference topics will include: Growth of Advanced Materials for Optoelectronics; Structural, Electrical and Optical Characterization of Optoelectronic Materials; Advanced Optoelectronic Devices; New Developments in Solar Cells Materials; Fundamental Properties of Optoelectronic Materials.

The Invited Speakers are: Trallero, University of Havana, Cuba; Diaz, University of Havana, Cuba; Tamargo, City University of New York (CUNY), USA; Hernandez-Calderon, CINVESTAV, Mexico DF; Pilkuhn, Stuttgart University, Germany; Sitter, University of Linz, Austria; Furdyna, University of Notre Dame, USA; Righini, IROE-CNR, Italy; Yao, Institute for Materials Research, Tohoku University, Japan; Leccabue, Institute MASPEC, Italy; Dominguez, CNM-Barcelona, Spain; Nobili, CNR, LAMEL Institute, Italy; Green,

Centre-PV Devices & Systems, University of NSW, Australia; S. Zory, University of Florida, Gainesville, USA

—Elias D. Towe, Editor

ED Sweden Chapter

—by Mikael Ostling

In the first quarter of 1998, an interesting lecture was held by Professor Lester F. Eastman, Cornell University. He gave a talk on "High Power Microwave AlGaIn/GaN HEMT's"

In February, the Co-Chair of the ED Sweden Chapter, Dr. Ted Johansson (SM IEEE 96) presented his Ph.D. thesis, "The transistor with emphasis on its use for radio frequency telecommunication". We now look forward to a very active period in the chapter. Before the Summer we have a few more lectures with EDS invited speakers.

A video short course on RF and microwave issues is planned. The chapter's membership number is increasing with many new student members joining the chapter. A jointly arranged LEOS activity has been suggested and discussions are under way.

—Mikael L. Ostling, Editor

1998 Engineering Foundation Conference on High-Temperature Electronic Materials, Devices and Sensors

—by Ilan Golecki



Attendees on the conference

The 1998 Engineering Foundation Conference on High Temperature Electronic Materials, Devices and Sensors was held Feb. 22-27, 1998 in San Diego, CA. This was the first time that this topic was addressed in a "Gordon" style: morning and evening sessions with afternoons reserved for ad-hoc meetings of leisure. The idea was conceived by Ilan Golecki and Bernard Gollomp and the conference was co-chaired by Ilan Golecki (Allied Signal, Inc.) and Elzbieta Kolawa (Jet Propulsion Laboratory). Financial assistance was provided by the Engineering Foundation and techni-

cal co-sponsorship by the IEEE Electron Devices Society and Instrumentation and Measurement Society.

Most aspects of High-Temperature Electronics were covered: materials, processing and device technologies of Si, SiC, Si₃N₄, GaAs, GaN and its alloys, diamond, and boron-based semiconductors; passive components; metallizations; packaging technologies from polymers and anodized metals through ceramics and Carbon-Carbon composites. Internationally acknowledged experts from the USA, Europe and Japan presented basic scientific principles, practical aspects and end-users' perspectives. There was a good balance between industry, government and academia. Many lively and informal discussions took place, contribution to cross fertilization of ideas. The papers have been peer-reviewed and will be published mid-1998 as an IEEE volume.

This conference will be reconvened in this format every 2-3 years. For further information, please contact Dr. Ilan Golecki, TEL: (973) 455-4938; E-MAIL: Ilan.Golecki@alliedsignal.com or the Engineering Foundation at TEL: (212) 705-7836; E-MAIL: engfnd@aol.com.

ED Santa Clara Valley Chapter

—by Peng Fang

The 1997-1998 committee was formed in June 1997. The new Chapter Chair is Peng Fang, Vice-Chair is Rashid Bashir, Secretary is Jeff Watt and Treasurer is Bob Gleason. In addition to the monthly evening seminar and monthly committee dinner meeting, the featured activity of this year was a recent record breaking half-day symposium held on January 30, 1998. The topic of this symposium was "Embedded DRAM". It was designed to reflect a new flavor of broadening the topics from pure technical seminar to an overall review and forecast from marketing trends, technology and manufacture perspectives. About 300 people attended the symposium, which was much more than the normal 80-100 attendees. The next half-day symposium will be held on June 26, 1998. The topic will be on wireless communication and interconnect technology.

The monthly evening seminars have been held in the conference hall of the National Semiconductor Credit Union. The topics are generally targeted towards the members. Some examples are:

- In Nov. 1997, Dr. James Duley, from Hewlett-Packard presented, "1997 National Technology Roadmap for Semiconductors", which predicted the forested development of semiconductor industry in the next 15 years.
- In Oct. 1997, Dr. Yong Liu, from Synopsys Inc. presented, "Interconnect: The Deep Submicron - IC Design Challenge".
- In Feb. 1998, Dr. Jon Tao, from AMD presented, "Recent Advances in Silicon Device Reliability".
- In April 1998, Alan Kramer from SGS Thomson Microelectronics Berkeley Lab presented "Touch Chip Solid-State Capacitive Finger Print Sensor".

Phoenix Waves and Devices Chapter

—by Michael LaRe

The Phoenix Waves and Devices Chapter is a joint chapter with APS, EDS, EMCS, LEOS, MTTs, UFFCS participation. It has 600 IEEE members. This is a very active chapter; in 1997, we held 17 technical meetings with topics ranging from "Antennas for Mobile Communication Systems", "Emissive Displays", "High Voltage Semiconductor SiC", to "Limits - some Are More Fundamental Than Others (Limits on the Density of Semiconductor Devices and LSI)" and many others. Recent meetings included: "Automotive Electronics - Challenges and Opportunities", presented by Rahul Dixit from TRW in Oct. 1997; "Synthesizers: Architectures and Attributes", presented by Richard M. Dougherty from Motorola in Nov. 1997; and "Future Trends in High-Resolution Radar" presented by Donald R. Wehner, a private consultant, in Dec. 1997.

Since January 1998, there have been two technical meetings organized by the chapters. In February, Professor William O. Brien, Jr. from the University of Illinois, presented a talk on "Modern Diagnostic Ultrasound Imaging - Assessing the Risks". In March, Wes Lukaszek from Wafer Charging Monitors, Inc., CA, presented a talk on "Reducing Charging Damage in IC Processing Equipment", and Dan J. Scott, Vice President of Three-Five Systems, Inc., presented a talk on "Liquid Crystal-on-Silicon Microdisplay" in April.

The chapter has established a web site with information about the chapter activities and chapter officers. The address is <http://emelc1.eas.asu.edu/~ieee/>.

Report on Thirty Sixth Annual International Reliability Physics Symposium

—by Shekhar Khandekar

Despite an economic down-turn in South-East Asia and at some of the major semiconductor corporations, 700 attendees from over 15 countries attended the 36th annual International Reliability Physics symposium (IRPS'98). IRPS is sponsored by the Electron Devices and Reliability societies of the IEEE. IRPS'98 was held in Reno, Nevada from March 30th through April 2nd, 1998.

At IRPS'98, sessions were held on the new topics of Microelectromechanical Systems (MEMS) Reliability and on Process Induced Damage. These sessions were held in addition to individual sessions on the traditional IRPS topics including Dielectric Reliability, Interconnects and Metallization, Hot Carrier Effects, Failure Analysis, Compound Semiconductors and Optoelectronics.

The featured keynote address at this year's symposium was titled "The Reliability Challenge: New Materials in the New Millennium" by Julie Spicer England, Vice President, Semiconductor Group, Application Specific Products/Worldwide Computer Products, Texas Instruments, Inc.

One of the key features of the conference was a focus session on the rapidly developing Microelectromechanical Systems (MEMS) technology. MEMS are currently used in such diverse products as bright projection displays and air bag sensors. MEMS are now being considered for additional critical applications and are expected to rapidly grow into a market approaching \$40B/year. Consequently, increasing efforts are being directed to the reliability of MEMS devices. This session included an invited paper on MEMS technology by Richard Payne of Cyrano Sciences. The contributed papers highlighted recent work to quantify the failure mechanisms of silicon-based MEMS actuators.

Additional information is available from the IRPS web page at <http://www.irps.org>, where a copy of all the presentations can be found. The 1999 IRPS will be held at Town & Country Hotel in San Diego, CA., on March 22-25, 1999.

—Paul K.L. Yu, Editor

Europe, Middle East & Africa (Region 8)

International University Conference: Electronics and Radiophysics of Ultra-High Frequencies (UHF-99) ED/MTT/AP St. Petersburg Chapter

The International University Conference: "Electronics and Radiophysics of Ultra-High Frequencies" will be held in St. Petersburg, May 24-28, 1999. Organization of this Conference was entrusted to the St. Petersburg State Technical University (better known under the former name – "Leningrad Polytechnical Institute") in the year of its centenary. It is sponsored by the Russian Foundation for Basic Research and Russian Ministry of Education.

Scientific programs include topics relevant to physics, engineering and applications of UHF electronics and radiophysics. New achievements in this field will be put for consideration and discussed. Approximately 150 participants from the Russian and foreign universities, research and industrial companies are expected to come to St. Petersburg. Abstracts of the proposed reports will have been published by the opening of the conference.

The following topics will be discussed: Vacuum Electronics of Ultra-High Frequencies (VE); Vacuum Microelectronics of Ultra-High Frequencies (VM); Plasma Electronics of Ultra-High Frequencies (P); Devices and Techniques of Ultra-High Frequency Radiophysics in Vacuum and Plasma Electronics (R); Applications of Ultra-High Frequencies (A).

The end of May is the best time in St. Petersburg. It is the beginning of the "white nights" when the weather is warm but not hot, and when even at midnight there is enough light to enjoy the spectacular views of our city. A large variety of social events will be offered to the participants. Except for the official conference banquet, the program will include tours of the most interesting places of St. Petersburg. Tickets to theaters and concert halls can be reserved. Preliminary Registration is allowable (registration form is available at <http://194.226.194.42/conf99>) until June 25, 1998. The second announcement will be made on September 15, 1998. The deadline for abstract submission is December 10, 1998.

For further information, please contact: Conference Secretariat UHF-99, Physical Electronics Department, St. Petersburg State Technical University, 29, Polytechnich-

eskaya St., St. Petersburg, 195251, Russia, TEL: +7(812) 5526127, FAX: +7(812) 5526127 (+7(812) 5527954), E-MAIL: louksha@twonet.stu.neva.ru. You can also reach us on the web at the above URL.

—Adrian Veron, Editor

MTT/ED/AP/LEO UKRI Chapter

—by Neil Williams

The chapter has organized a number of successful activities since the last report, including an evening lecture by Dave Palmer (Philips Broadband Networks) on 'Microwave Video Distributor Systems' and our 'flagship' event, the two-day 'International Workshop on High Performance Electron Devices for Microwave Optoelectronic Applications' (EDMO '97), which attracted papers from 20 countries. This year, the committee is endeavoring to organize more activities away from London and our first 1998 AdCom meeting was held at the University of York, followed by an evening lecture by Professor Peter Watson on "New Techniques in Radar Propagation Research". Our second AdCom meeting was held at Cardiff University on Thursday, 28 May 1998, was followed by a full day workshop on 'Wide-band Gap Semiconductors'. The program for the second half of the year includes several events, which should not be missed. These include:

- 2-4 September: "Terahertz Electronics Workshop", to be held at the University of Leeds.
- 29 September – 1 October: "Membership Booth" at the 1998 Microwaves and RF Exhibition and Conference to be held at Wembley Conference Centre, London.
- 23/24 November: "International Workshop on High Performance Electron Devices for Microwave and Optoelectronic Applications (EDMO '98)" to be held at UMIST, Manchester.

For further information, please contact the Chapter Chair, Neil Williams, ERA Technology Limited, Cleeve Road, Leatherhead, Surrey KT22 7SA, UK. TEL: +44 (0) 1372 367061; FAX: +44 (0) 1372 367099; E-MAIL: neil.williams@era.co.uk.

ED/MTT Egypt Chapter

—by Ibrahim Salem

The following summarizes our activities during the last three months:

1. Two papers were presented at Helwan University-Faculty of Engineering. The first on 24 February 1998 by Prof. A.S. Omar (Hamburg Technical University, Germany), titled "Complete characterization of corrugated elliptical horns for millimeter wave anten-

nas". The second one was by Prof. Migdad Al-Nuaimi (Glamorgan University, U.K.), titled "A generalized site shielding procedure for radio system planning at microwave frequencies".

2. Our chapter shared with the National URSI committee in the activities of the 15th National Radio Science Conference, which was held at Helwan University 24-26 February 1998. During this conference, 15 papers addressed electron devices and photonics among 80 papers for other commissions.
3. The 16th NRSC Conference will be held 23-25 February, 99 at Ain Shams University, Cairo. The technical program will consist of invited and submitted papers covering the URSI commissions A-K. The submission date for manuscripts is 10 October 1998.

More information can be obtained from the Chapter Chairman, Prof. Ibrahim A. Salem, 17 Elqouba Street/3, Roxy Heliopolis, Cairo - 11341, Egypt. TEL: 202-349-8214; FAX: 202-263-6802; E-MAIL: isalem@brainy1.ie-eg.com.

ED Israel Chapter

—by Gady Golan

The Workshop on "Science and Technology of Nanostructures" (STN '98) joint with the Israel Vacuum Society (IVS) is planned for April 22, 1998, at the Weizmann Institute of Science, Rehovot, Israel. The purpose of this workshop is to discuss the latest information of various aspects of research and developments in the field of nanoscience and technology, with special emphasis being given to equipment design of scanning probe techniques, processes and potential applications. A report on the workshop will be given in the next issue of the EDS Newsletter. More announcements may be found on <http://www.cteh.ac.il/conferences/ivs/stn-98.html>.

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

—Terry H. Oxley, Editor

Asia & Pacific (Region 10)

ED/LEO Australia Chapter

—by Chennupati Jagadish

The Australian Conference on Optical

Fiber Technology was held at the University of Melbourne on 5-8 July 1998. This conference was organized by the IREE Society. The ED/LEO Australia Chapter is a technical co-sponsor of the event.

The Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD '98) will be held during 14-16, December 1998 in Perth, WA. EDS, LEOS, ED/LEO Australia Chapter, IEEE WA Section, Australian Institute of Physics and Australian Materials Research Society are technical co-sponsors of the event. The abstract deadline is 31 August 1998.

Further information can be obtained from COMMAD '98 chair, Prof. Laurie Faraone, TEL: 61-8-9380-3104; FAX: 61-2-6249-0511; E-MAIL: faraone@ee.uwa.edu.au. The COMMAD Home Page address is <http://www.ee.uwa.edu.au/~COMMAD98/>.

For further information about Chapter Activities, please contact the Chapter Chair, C. Jagadish, TEL: 61-2-6249-0363; FAX: 61-2-6249-0511; E-MAIL: c.jagadish@ieee.org. The Chapter Home Page: <http://www.physics.mq.edu.au/~goldys/home.htm>.

ED/MTT India Chapter

—by K.S. Chari

In the beginning of the new year, the Chapter had taken initiatives in starting the IEEE STAR program in India for the first time and supporting the young faculty in organizing local technical workshops.

The Chapter team consisted of the Chapter Chair and Chapter STAR coordinator Prof. Devi Chadha from IIT Delhi. They visited a few promising schools that showed active interest to participate in the IEEE STAR program. Both these members have given an overview of the nature of the STAR activities and the benefits to the institutions and the participating students.

The interactions have brought out an overwhelming response from higher secondary schools based in Delhi. The Ahlcon Public School, Mayur Vihar and Delhi Public School, Vasant Kunj were selected. A total of 28 students have opted for STAR exposure. Two school staff members, Ms. Archana Deppak from Ahlcon Public School and Ms. Jyoti Gupta from Delhi Public School, volunteered to be STAR coordinators at the respective schools. A full year program involving many technical events were drawn out and the first STAR event was held on 15 January 1998. In this event, the students interacted with

their peers in the Engineering and Technology disciplines and visited various laboratories working on Lasers, Multimedia, Robotics etc. at IIT. The IIT Delhi Professors: Prof. S.R. K. Iyengar from the Mathematics Department, Prof. Bharathi Bhat and Prof. B.D. Nagchoudhury from Electrical Engineering Department and Prof. Anshul Kumar from the Department of Computer Science and Engineering, have addressed the student gathering and answered several career related issues. EDS has extended the Chapter funding under the STAR activity and support from MTT is awaited.

Two local workshops were held. They were 'Current Trends in Communication' and 'Microwaves and Photonics'. These were organized by the Chapter in collaboration with the Forum for Microwaves at Delhi University and IEEE India Council AES/COM/LEO Chapter. These events were held during 2-3 March and 4 March 1998, respectively. Prof. Enakshi Sharman and Prof. A.K. Verma of Delhi University coordinated the first activity and Prof. Lakshmi Gupta of Delhi University coordinated the second activity. These workshops were also financially supported by the Department of Electronics and the Govt. of India substantially. About 100 participants have attended each of these workshops. The workshops have highlighted the trends in the ED/MTT areas in these fields.

For further information about chapter activities, please contact Chapter Chair: Dr. K.S. Chari, Director, Micro Electronics & Photonics Division, Department of Electronics, C.G.O. Complex, New Delhi, India, TEL: 91-11-4361464; FAX: 91-11-4363082; E-MAIL: chari@xm.doe.ernet.in.

—Chennupati Jagadish, Editor

ED Korea Chapter

—by Kwyro Lee

As of Nov. 1, 1997, Prof. Kwyro Lee of KAIST started serving as the new Chair after Prof. Min-Koo Han of Seoul National University, had served for 2 years.



Dr. Yuri Poplavko (3rd back left), Prof. J.D. Lee (4th back left), Prof. M.K. Han (2nd front left), and Prof. K. Lee (3rd front left)

Starting this year, the ED Korea Chapter launched its cooperation support from the Korean Conference on Semiconductors (sponsored by Korean Semiconductor Industry Association), which is the largest annual domestic technical conference on semiconductor technology. KCS was built in 1994, and this is its 5th conference. More than 800 participants registered, and 325 papers out of 460 that were submitted were presented including 16 invited papers. After the opening speech of the Conference Chairman, Prof. Jong-Duk Lee of Seoul National University, Dr. Hyun-Jong Shin of Hyundai Electronics Co., Ltd. gave the key note speech on "System on Chip", which was followed by 16 invited talks, 206 oral presentations, and 103 poster presentations. One rump session was held with the theme of "System On Chip".

To support this conference, the ED Korea Chapter prepared two best poster paper awards, which were selected by a majority vote of the audience. One award was given to the paper entitled, "Structure Establishment and Feature Investigation of Laser Using InGaAs Quantum Dot" by Hyung-Bum Joo, Jong-Hee Kim, Dae-Ho Lim, Kae-Mo Yang, Ki-Young Lim, Eun-Kyung Seo and Hyung-Jae Lee of Chonbuk National University. The other paper was to be awarded was entitled, "Interfacial Studied on the Electroplated Eutectic Pb/Sn Flip-Chip Solar Bump and UBM (Under Bump Metallurgy)" by Sae-Yong Chang, Kyung-Wook Baek of KAIST. Each prize is a beautiful plate medal prepared by the chapter and the cash price of 100,000 Korean Won was donated by SEMI Korea and Anam Semiconductor Co., respectively.

During KCS, our chapter meeting started with a lecture provided by Prof. Dr. Yuri M. Poplavko, IEEE Distinguished Lecturer. The title of the talk was "Microwave Assistant Processing of Ferroelectric Integrated Films for Memories Application".

For more information, contact the Chair, Prof. Kwyro Lee, E-MAIL: krlee@eekaist.kaist.ac.kr.

SSC/ED Seoul Chapter

—by Chong-Gun Yu

The IEEE Solid-State Circuits Society/Electron Devices Society (SSCS/EDS) Joint Chapter of the Seoul Section was formed on December 3, 1997. The chapter committee members consist of 16 professors and 1 industrial executive director all of whom are from Seoul and its vicinity. At the first meeting on January 15, 1998, Prof. Moon-Key Lee from Yonsei University and Prof.



Caption: Front row from left: J.D. Cho, K.S. Yoon, M.K. Lee, S.K. Kim, O.K. Kwon, B.G. Park. Standing from left: C.G. Yu, I.H. Son, I.C. Song, C.H. Lee, J.H. Choi, W.Y. Choi, D.W. Kim, J.H. Cho.

Kwang-Sub Yoon from Inha University were elected and will serve as Chair and Secretary, respectively.

The chapter is devoted to the missions of the IEEE SSC and ED societies, especially for the IEEE SSCS/EDS members in Seoul. The purpose of forming this chapter is to increase IEEE membership in the Seoul Section by offering distinguished lectures and videotape short courses as we recognize that many of the important new technical developments are coming from this section.

The annual activity plans of our chapter include:

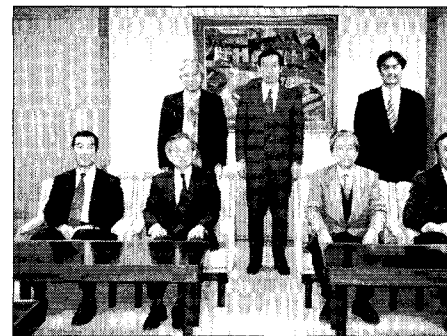
1. Educational Activities coordinated by Prof. J. Cho and Prof. C. Cho. On June 8th, a lecture was given on "Smart Power ICs, Power ICs in Telecommunication Applications" by Ayman Shibib. On October 2nd, lectures will be given on "Flat Panel Displays" by Dr. Alfred C. Ipri and on "Low Power Image and Communication Chip Technologies" by Hans Stork. On November 23rd, there will also be a Seminar on "Small Geometry CMOS, Low Power CMOS, or RF CMOS" given by Dr. Hiroshi Iwai.
2. Professional Activities coordinated by Prof. D. Kim and Prof. I. Song: domestic workshops and conferences will be co-sponsored with other institutes. Preparation is currently underway to hold two regional workshop/conferences, including the International Workshop on Advanced LSI's and ASP-DAC (Asia & South Pacific Design Automation Conference).
3. Student Activities coordinated by Prof. W. Choi: Several presidents of design house ventures will be invited to seminars at local institutions. These seminars will be beneficial not only to student members, but also to student membership development.
4. Publicity coordinated by Prof. S. Lee and Prof. C. Lee: The Home Page of the

chapter has been created at <http://ieee-korea.inha.ac.kr/ed.html>. This Home Page will be served as a vehicle not only to deliver updated news, but also to receive feedback from Seoul Section members.

For further chapter information, please contact Prof. Moon-Key Lee, Chapter Chair; TEL: +82-2-361-2867; FAX: +82-2-312-4584; E-MAIL: mklee@bubble.yonsei.ac.kr.

New ED Tokyo Chapter Committee for 1998 and 1999

—by Hiroshi Iwai



Tokyo ED Chapter Committee meeting: Left to right, Row 1: M. Fukuma, K. Tada, C. Hamaguchi, K. Tsubouchi, Row 2: H. Iwai, K. Taniguchi, T. Hiramoto

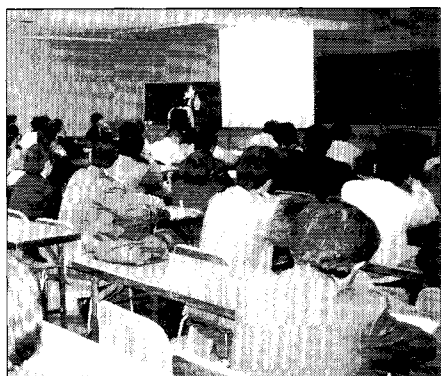
At the ED Tokyo Chapter's general meeting held in Tokyo on January 29, 1998, new committee members for 1998 and 1999 were elected as follows: Chair: Dr. H. Watanabe of NEC (Former Vice Chair), Vice Chair: Prof. K. Tsubouchi of Tohoku Univ., Secretary: Dr. M. Fukuma of NEC (Former Treasurer), Treasurer: Prof. K. Masu of Tohoku University. Prof. C. Hamaguchi (Former Chair) and Prof. K. Taniguchi (Former Secretary) retired from the committee. On behalf of the Tokyo chapter members, I would like to thank them for the outstanding contribution to the chapter.

Contact information of the new Secretary is: Dr. Masao Fukuma, C & C Media Research Lab., NEC Corporation, 1-1, Miyazaki 4-Chome, Miyamae-ku, Kawasaki, 216-8555, Japan, TEL: +81-44-856-8410; FAX: +81-44-856-2235; E-MAIL: fukuma@ccm.cl.nec.co.jp.

Briefing Session for the 1997 IEDM

—by Masao Fukuma

An annual briefing session for the 1997 IEDM was held on January 29, 1998 at Kikai Shinko Kaikan, Tokyo. Six speakers were invited to report the highlights



Briefing Session for the 1997 IEDM in Tokyo

of the 1997 IEDM. They were: H. Wakabayashi (NED) for silicon processes, S. Takagi (Toshiba) for silicon devices, F. Ohtsuka (Hitachi) for integrated circuits, K. Suzuki for modeling and simulation, T. Tanaka (Matsushita) for compound semiconductors and S. Fujiwara (NTT) for single electron devices. All reports were well organized and very useful for participants to learn new ideas and the technology trend in electron devices. The number of participants exceeded 100, which breaks the previous record in 1997. Since this session was combined with annual meeting for members of the EDS Tokyo Chapter, new officers for 1998-1999 were introduced and were approved by the members.

Workshop Schedule Co-Sponsored by ED Tokyo Chapter

—by Masao Fukuma

The ED Tokyo chapter is one of the co-sponsors for the domestic workshops (Japanese language) sponsored by the Institute of Electronics, Information and Communication Engineers (IEICE). The workshops are organized by two subcommittees of IEICE: one is for Silicon Device and Materials (SDM) and the other is for Integrated Circuits and Devices (ICD). The following are the workshop schedules for fiscal year 1998.

The SDM schedule is as follows:

- July 23-24, 1998: International Workshop on Advanced LSIs (Sapporo)
- August 20-21: Microfabrication technology and clean processes (Sendai)
- October 22-23: Process, device and circuit modeling and simulation (Osaka)
- November: Lithography (Tokyo)
- December: Silicon and related material (Kyoto)
- January: Wiring (Tokyo)
- February: SiO substrate and devices (Tokyo)

For more information contact the

Chair: Hiroshi Ishiware (Tokyo Institute of Technology), TEL: +81-45-924-5040; FAX: +81-45-921-0898; E-MAIL: ishiware@pi.titech.ac.jp.

The ICD schedule is as follows:

- July 23-24: 1998 International Workshop on Advanced LSIs (Sapporo)
- August 20-21: Analog/Digital LSIs for multimedia/communication (Morioka)
- September 17-18: 2nd Design Gaea (Fukuoka)
- October 15-16: Processor, DSP and embedded memory (Okinawa)
- October 22-23: Process, device and circuit modeling and simulation (Osaka)
- November 26-28: 2nd System LSI Workshop
- December 10-11: Assembly technology for LSI systems (Nagasaki)
- January 20-22: Compound semiconductor LSIs and high speed/high frequency IC and devices (Tokyo)
- March 4-5: System on silicon (Nagasaki)

For more information, contact the Chair: Gensuke Goto (Fujitsu), TEL: +81-44-754-2532; FAX: +81-44-754-2744; E-MAIL: GDE03115@niftyserve.or.jp

International Conference on Microelectronic Test Structures (ICMTS '98)

—by Takashi Ohzone

The International Conference on Microelectronic Test Structures (ICMTS '98) (sponsored by the IEEE Electron Devices Society in cooperation with the Institute of Electronics, Information and Communication Engineers and The Japan Society of Applied Physics) was held at the Kanazawa Citymonde Hotel, Ishikawa, Japan on March 23-16, 1998. The purpose of the conference is to bring together designers and users for test structures to discuss recent developments and future directions. The Conference was preceded by a one-day Tutorial Short Course to provide the participants with a guideline on good design, test and analysis so that superior test-structure can be applied to the production technology. There was also an equipment exhibition relating to the latest test structure measurements.

More than 125 participants attended from 17 countries, and hot discussions were held at each session as well as at the coffee breaks. Forty-four high quality papers, including 3 invited talks, were presented in 10 sessions and 1 poster session. Three invited talks were: "300mm Evaluation Activities in Selete", by Dr. K. Fujiwara (SELETE); "Requirements and Challenges for Lithography: Beyond 193-nm Optics" by J.T. Canning (SEMATECH); and "Current

Status and Issues of X-ray Mask", by S. Uchiyama (NTT). The best paper award of ICMTS'97 was presented to Dr. H. Tuinhout (Philips Research Laboratories). ICMTS is held on a three-year rotation between North America, Asia and Europe. The next ICMTS 1999 will be held in Goeteborg, Sweden on March 15-18, 1999.

For further information, contact the ICMTS 1999 Conference Secretariat: Ivan Ring Nielsen, Technoconsult, Dortheavej 7, DK-2400 Copenhagen NV, Denmark. TEL: +45-38-880 600; FAX: +45-38-880 611; E-MAIL: technoconsult@technodata.dk or World Wide Web at <http://www.ee.ed.ac.uk/~qjw/ICMTS/ICMTSindex.html>.

1998 Computer and Devices for Communication (CODEC '98)

—by Sudakshina Kundu

The International Conference on Computers and Devices for Communication (CODEC '98) was held in Science City, Calcutta, India on January 13-17, 1998. This conference was organized by the Institute of Radio Physics and Electronics, Calcutta University, technically co-sponsored by IEEE EDS, and in collaboration with many other government and non-government organizations. It marked the beginning of a series of programs planned to celebrate the golden jubilee year of the Institute. The programmes were meant to pay tribute to Prof. B.R. Nag, who retired from this Institute in September 1997 and to his lifelong contribution in the field of Electronics. Apart from the keynote address by Prof. Narayanamurti of UC Santa Barbara, and three other plenary lectures by Dr. A.P. Mitra, Ex.D.G.-C.S.I.R., India, Prof. B.R. Nag, INSA Fellow, India, and R. H. Iwai, Toshiba, there were a number of sessions running in parallel and a poster session. A panel discussion entitled "Electronics in the Year 2000: Directions for Education & Industry" was held, in order to fulfill its commitment to the future of Electronics in India. The last day was dedicated to the revered memory of Acharya J.C. Bose, the pioneer of millimeter wave studies and one of the greatest scientists that India has ever produced. The conference involved two leading industrial houses, Digital and Tata-Telecom, in presenting their latest products.

On the whole, it was a very successful conference with over 250 participants with delegates from the U.S.A., UK, Germany, Japan and Russia. The delegates interacted heartily with each other during tea breaks, lunch recesses, the conference

(continued on page 19)

EDS Meetings Calendar

(As of June 22, 1998)

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

July 19 - 24, 1998, @ **IEEE INTERNATIONAL VACUUM MICROELECTRONICS CONFERENCE**, Location: The Grove Park Inn Resort, Asheville, NC, Contact: Rene Gielen, Tel: (919) 515-2378, Fax: (919) 515-7724, E-Mail: rene_gielen@ncsu.edu, Deadline: Past Due

Aug. 2 - 6, 1998, @ **INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE**, Location: Sheraton Colorado Springs Hotel, Colorado Springs, CO, Contact: Samim Anghaie, Tel: (352) 392-1427, Fax: (352) 392-8656, E-Mail: anghaie@inspi.ufl.edu, Deadline: Past Due

Aug. 2 - 6, 1998, * **IEEE NON-VOLATILE SEMICONDUCTOR MEMORY WORKSHOP**, Location: Hyatt Regency Hotel, Monterey, CA, Contact: Arthur Wang, Tel: (408) 232-8811, Fax: (408) 232-8805, E-Mail: awang@hea.com, Deadline: Past Due

Aug. 10 - 12, 1998, ✓ **INTERNATIONAL SYMPOSIUM ON LOW POWER ELECTRONICS AND DESIGN**, Location: Monterey Convention Center, Monterey, CA, Contact: Farid N. Najm, Tel: (217) 333-7678, Fax: (217) 244-1946, E-Mail: najm@uiuc.edu, Deadline: Past Due

Aug. 18 - 20, 1998, ✓ **INTERNATIONAL CONFERENCE ON MICROWAVE AND MILLIMETER WAVE TECHNOLOGY**, Location: Media Center, Beijing, China, Contact: Mengqiu Zhou, Tel: 86-10-68283463, Fax: 86-10-68283458, E-Mail: mqzhou@public.bta.net.cn, Deadline: Past Due

Aug. 29, 1998, ✓ **HONG KONG ELECTRON DEVICES MEETING**, Location: Hong Kong University of Science & Technology, Hong Kong Contact: Charles Surya, Tel: 852-2766-6220, Fax: 852-2362-8439, E-Mail: ensurya@polyu.edu.hk, Deadline: Past Due

Aug. 30 - Sept. 2, 1998, ✓ **TOPICAL WORKSHOP ON HETEROSTRUCTURE MICROELECTRONICS FOR INFORMATION SYSTEM APPLICATIONS**, Location: Shonan Village Center, Hayama-Machi, Kanagawa, Japan, Contact: Dimitris Pavlidis, Tel: (313) 647-1778, Fax: (313) 763-9324, E-Mail: pavlidis@umich.edu, Deadline: Past Due

Aug. 31 - Sept. 4, 1998, ✓ **INTERNATIONAL CONFERENCE ON MOLECULAR BEAM EPI-TAXY**, Location: Palais Des Festivals, Cannes, France, Contact: Frederic Raymond, Tel: 33-04-93-95-78-10, Fax: 33-04-93-95-83-61, E-Mail: raymond@chrea.cnrs.fr, Deadline: Past Due

Sept. 2 - 4, 1998, @ **IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMICONDUCTOR PROCESSES AND DEVICES**, Location: Auditorium Pieter De Somer, Leuven, Belgium, Contact: Timshel, Tel: 32-16-281322, Fax: 32-16-281214, E-Mail: info@timshel.be, Deadline: Past Due

Sept. 7 - 9, 1998, ✓ **INTERNATIONAL CONFERENCE ON ACTUAL PROBLEMS OF ELECTRON DEVICE ENGINEERING**, Location: Saratov State Technical University, Saratov, Russia, Contact: Irina B. Jakovleva, Tel: 7-845-2-506760, Fax: 7-845-2-507563, E-Mail: apede98@star.sstu.runnet.ru, Deadline: Past Due

Sept. 7 - 10, 1998, ✓ **INTERNATIONAL CONFERENCE ON SOLID-STATE DEVICES AND MATERIALS**, Location: International Conference Center Hiroshima, Hiroshima, Japan, Contact: Shoso Shingubara, Tel: 81-824-24-7645, Fax: 81-824-22-7195, E-Mail: shingu@ipc.hiroshima-u.ac.jp, Deadline: Past Due

Sept. 7 - 11, 1998, ✓ **EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE**, Location: School of Electrical Engineering ENSERB of the University of Bordeaux, Bordeaux, France, Contact: Herbert Gruenbacher, Tel: 43-1-58801-8150, Fax: 43-1-586-9697, E-Mail: hg@vlsivie.tuwien.ac.at, Deadline: Past Due

Sept. 14 - 16, 1998, # **INTERNATIONAL CONFERENCE ON MATERIALS FOR MICROELECTRONICS**, Location: Bordeaux Convention Center, Bordeaux, France, Contact: Cathy Pearcey, Tel: 44-171-839-4071, Fax: 44-171-839-6591, E-Mail: cathy_pearcey@materials.org.uk, Deadline: Past Due

Sept. 15 - 17, 1998, ✓ **INTERNATIONAL SYMPOSIUM ON PHYSICS AND ENGINEERING OF MILLIMETER AND SUB-MILLIMETER WAVES**, Location: Kharkov State University, Kharkov, Ukraine, Contact: Alexander Nosich, Tel: 380-572-448595, Fax: 380-572-441105, E-Mail: alex@emt.kharkov.ua, Deadline: Past Due

Sept. 18 - 20, 1998, ✓ **IEEE INTERNATIONAL WORKSHOP ON INTEGRATED POWER PACKAGING**, Location: Ramada Congress Hotel, Chicago, IL, Contact: Krishna Shenai, Tel: (312) 996-2633, Fax: (312) 996-0763, E-Mail: k.shenai@ieee.org, Deadline: Past Due

Sept. 20 - 23, 1998, # **INTERNATIONAL SYMPOSIUM ON ULTRA CLEAN PROCESSING OF SILICON SURFACES**, Location: Thermae Palace Hotel, Oostende, Belgium, Contact: Marc Heyns, Tel: 32-16-281348, Fax: 32-16-281315, E-Mail: heyns@imec.be, Deadline: Past Due

Sept. 23 - 25, 1998, * **IEEE/SEMI ADVANCED SEMICONDUCTOR MANUFACTURING CONFERENCE AND WORKSHOP**, Location: Copley Plaza (Fairmont Hotel), Boston, MA, Contact: Scott McClure, Tel: (802) 769-9380, Fax: (802) 769-8724, E-Mail: scottmc@vnet.ibm.com, Deadline: Past Due

Sept. 23 - 26, 1998, ✓ **INTERNATIONAL CONFERENCE ON ACTUAL PROBLEMS OF ELECTRONIC INSTRUMENT ENGINEERING**, Location: Novosibirsk State Technical University, Novosibirsk, Russia, Contact: Lilija I. Lisitsina, Tel: 7-3832-460619, Fax: 7-3832-465061, E-Mail: nrec@redhouse.nstu.nsk.su, Deadline: Past Due

Sept. 27 - 29, 1998, * **IEEE BIPOLAR/BiCMOS CIRCUITS AND TECHNOLOGY MEETING**, Location: Minneapolis Marriott City Center Hotel, Minneapolis, MN, Contact: Janice V. Jopke, Tel: (612) 934-5082, Fax: (612) 934-6741, E-Mail: jjopke@aol.com, Deadline: Past Due

Sept. 28 - Oct. 2, 1998, ✓ **INTERNATIONAL SYMPOSIUM ON SIGNALS, SYSTEMS, AND ELECTRONICS**, Location: Palazzo dei Congressi, Pisa, Italy, Contact: Filippo Giannetti, Tel: 39-50-568548, Fax: 39-50-568522, E-Mail: filippo@iet.unipi.it, Deadline: Past Due

Oct. 2 - 9, 1998, ✓ **INTERNATIONAL SCHOOL ON CHAOTIC OSCILLATIONS AND PATTERN FORMATION**, Location: Volzhskie Dali Holiday Hotel, Saratov, Russia, Contact: Dmitry I. Trubetskov, Tel: 7-8452-241696, Fax: 7-8452-514298, E-Mail: true@cas.ssu.runnet.ru, Deadline: Not Available

Oct. 5 - 6, 1998, ✓ **IEEE EUROPEAN GALLIUM ARSENIDE AND RELATED COMPOUNDS**

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APPLICATION SYMPOSIUM, Location: Rai Center, Amsterdam, The Netherlands, Contact: Giuliano Gatti, Tel: 31-71-5654529, Fax: 31-71-5654596, E-Mail: ggatti@estec.esa.nl, Deadline: Past Due

Oct. 5 - 7, 1998, ✓ **ADVANCED SEMICONDUCTOR DEVICES AND MICROSYSTEMS**, Location: The Castle of Smolenice, Smolenice, Slovakia, Contact: Juraj Breza, Tel: 4217-60291328, Fax: 4217-65423480, E-Mail: breza@elf.stuba.sk, Deadline: Past Due

Oct. 5 - 7, 1998, # **IEEE INTERNATIONAL CONFERENCE ON COMPUTER DESIGN: VLSI IN COMPUTERS AND PROCESSORS**, Location: Marriott Hotel at the Capital, Austin, TX, Contact: Mary-Kate Rada, Tel: (202) 371-1013, Fax: (202) 728-0884, E-Mail: m.rada@computer.org, Deadline: Past Due

Oct. 5 - 8, 1998, * **IEEE INTERNATIONAL SOI CONFERENCE**, Location: Indian River Plantation, Marriott Resort, Stuart, FL, Contact: Ted Houston, Tel: (972) 995-9131, Fax: (972) 995-2770, E-Mail: ted-houston@ti.com, Deadline: Past Due

Oct. 5 - 9, 1998, ✓ **EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS**, Location: Scandic Hotel Copenhagen, Copenhagen, Denmark, Contact: Claus Kjaergaard, Tel: 45-4525-5266, Fax: 45-4588-0286, E-Mail: ck@iae.dtu.dk, Deadline: Past Due

Oct. 6 - 8, 1998, ✓ **ELECTRICAL OVER-STRESS/ELECTROSTATIC DISCHARGE SYMPOSIUM**, Location: John Ascuaga's Nugget Hotel, Reno, NV, Contact: ESD Association, Tel: (315) 339-6937, Fax: (315) 339-6793, E-Mail: eosesd@aol.com, Deadline: Past Due

Oct. 6 - 10, 1998, * **INTERNATIONAL SEMICONDUCTOR CONFERENCE**, Location: Sinaia Hotel, Sinaia, Romania, Contact: Doina Vancu, Tel: 401-2301448, Fax: 401-2307519, E-Mail: cas@imt.ro, Deadline: Past Due

Oct. 7 - 9, 1998, @ **IEEE INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING**, Location: Hotel East 21 Tokyo, Tokyo, Japan, Contact: Sumitomo Hirota, Tel: 81-3-3815-8775, Fax: 81-3-3815-8529, E-Mail: rlz@ppp.bekkoame.or.jp, Deadline: Past Due

Oct. 12 - 15, 1998, * **IEEE INTERNATIONAL INTEGRATED RELIABILITY WORKSHOP**, Location: Stanford Sierra Camp, S. Lake Tahoe, CA, Contact: Sally J. Yankee, Tel: (802) 769-3242, Fax: (802) 769-1220, E-Mail: yankees@btvlabum.vnet.ibm.com, Deadline: 7/7/98

Oct. 12 - 16, 1998, @ **IEEE INTERNATIONAL SYMPOSIUM ON COMPOUND SEMICON-**

DUCTORS, Location: Nara-ken New Public Hall, Nara, Japan, Contact: Kimiyoshi Yamasaki, Tel: 81-462-40-2500, Fax: 81-462-40-2872, E-Mail: kyama@aocl.ntt.co.jp, Deadline: Past Due

Oct. 19 - 22, 1998, ✓ **INTERNATIONAL WORKSHOP ON COMPUTATIONAL ELECTRONICS**, Location: Osaka University, Osaka, Japan, Contact: Masato Morifugi, Tel: 81-6-879-7767, Fax: 81-6-879-7774, E-Mail: morifugi@nl.ele.eng.osaka-u.ac.jp, Deadline: Past Due

Oct. 20 - 23, 1998, ✓ **INTERNATIONAL CONFERENCE ON SOLID-STATE AND INTEGRATED CIRCUITS TECHNOLOGY**, Location: Beijing International Convention Centre, Beijing, China, Contact: Mengqi Zhou, Tel: 86-10-68283463, Fax: 86-10-68283458, E-Mail: mqzhou@public.bta.net.cn, Deadline: Past Due

Oct. 21 - 23, 1998, ✓ **INTERNATIONAL CONFERENCE ON INTEGRATED CIRCUIT YIELD**, Location: University of Nis, Nis, Yugoslavia, Contact: Gary Cheek, Tel: (617) 937-2556, Fax: (617) 937-2008, E-Mail: gary.cheek@analog.com, Deadline: Past Due

Nov. 1, 1998, ✓ **GALLIUM ARSENIDE RELIABILITY WORKSHOP**, Location: Westin Peachtree Plaza, Atlanta, GA, Contact: Anthony A. Immorlica, Jr., Tel: (603) 885-1100, Fax: (603) 885-

1074, E-Mail: anthony.a.immorlica@lmco.com, Deadline: 8/17/98

Nov. 1 - 4, 1998, * **IEEE GALLIUM ARSENIDE INTEGRATED CIRCUITS SYMPOSIUM**, Location: Westin Peachtree Plaza, Atlanta, GA, Contact: Bill Stanchina, Tel: (310) 317-5089, Fax: (310) 317-5450, E-Mail: wstanchina@msmail4.hac.com, Deadline: Past Due

Nov. 2 - 5, 1998, ✓ **INTERNATIONAL SEMINAR/WORKSHOP ON DIRECT AND INVERSE PROBLEMS OF ELECTROMAGNETIC AND ACOUSTIC WAVE THEORY**, Location: Tbilisi State University, Tbilisi, Georgia, Contact: Mykhailo I. Andriychuk, Tel: 38-0322-651944, Fax: 38-0322-637088, E-Mail: voi@ippmm.lviv.ua, Deadline: Past Due

Nov. 2 - 6, 1998, ✓ **MANUFACTURING SCIENCE AND TECHNOLOGY GROUP PROGRAM**, Location: Baltimore Convention Center, Baltimore, MD, Contact: Frederick Dill, Tel: (914) 945-3332, Fax: (914) 945-4520, E-Mail: dill1@watson.ibm.com, Deadline: Past Due

Nov. 4, 1998, ✓ **IEEE ELECTRON DEVICES ACTIVITIES IN WESTERN NEW YORK**, Location: Rochester Institute of Technology, Rochester, NY, Contact: Karl Hirschman, Tel: (716) 475-5130, Fax: (716) 475-5041, E-Mail: kdhemc@rit.edu, Deadline: 10/1/98

Regional and Chapter News *(continued from page 17)*

banquet and the cultural evening. Young and enthusiastic students and research workers from different parts of India and Bangladesh gathered to listen to the lectur-

ers and exchange notes with the learned speakers.

-Hiroshi Iwai, Editor



Attendance of the CODEC '98



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