

July 2003

Vol. 10, No. 3 ISSN:1074 1879

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Contributions Welcome

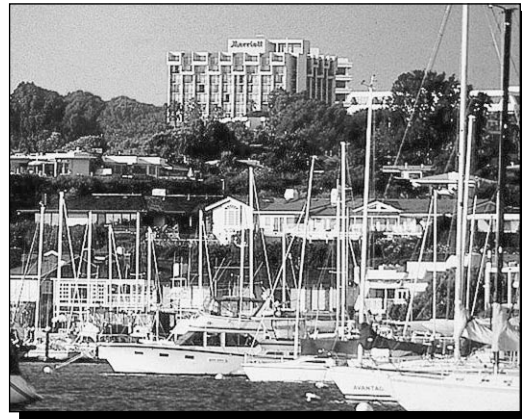
Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

Newsletter Deadlines

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

IEEE Electron Devices Society Newsletter

2003 IEEE International SOI Conference



The 29th Annual IEEE International SOI Conference, the premier conference dedicated to current trends in Silicon-on-Insulator technology, will be held September 30-October 2, 2003 at the Newport Beach Marriott Hotel & Tennis Club, Newport Beach, California. A one-day Tutorial Short Course will precede the conference on Monday, September 29th.

The SOI conference was established with the support of IEEE to provide a forum for open discussion in all areas of silicon-on-insulator technologies and their applications. Ever increasing demand and modifications in this technology bring the industry together to discuss new accomplishments and gains. Original papers presenting new developments in the industry will be presented at the conference.

The 2003 SOI International Conference will begin with a half-day plenary session followed by two days of oral sessions, a poster session and a late news session. A Best Paper Award will be presented at the closing on Thursday. Session topics will focus on basic materials research, device research, circuit development (special and improved) and applications and uses. Rump sessions will be held on Wednesday evening, October 1. These sessions encourage attendees to share their opinions and expertise on the chosen topics of discussion.

Additionally, a materials and equipment exhibition relating to SOI technology will be held concurrently with the conference. Participants will have the opportunity to visit the exhibit area to see what's new in SOI. Overall, the 2003 SOI International Conference offers attendees a broad spectrum of information, opportunities for discussion with one's peers, and is a must for engineers with direct involvement or partial involvement in SOI.

The 2003 SOI Conference seeks papers on a wide range of SOI technology including:

- SOI material science/modification, material characterization, and manufacture
- SOI device Physics and modeling
- SOI circuit applications (high-performance microprocessors, SRAMs,

(continued on page 4)

Your Comments Solicited

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

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EDS Educational Activities Committee Report



Ilesanmi Adesida

The main objectives of the Educational Activities Committee are to provide opportunities and the forum for members to expand their knowledge of our technical fields. The Committee also seeks to provide opportunities for the Society to attract new members and to assist in promoting student activities. The activities developed for the year 2003 reflect these objectives. The Committee's current membership strength is seventeen,

and its members are appointed by the President to reflect the worldwide geographical spread of the Society. The Chair is Ilesanmi Adesida of the University of Illinois at Urbana-Champaign, USA and the other members are K.S. Chari (Electronics Niketan, India); Jamal Deen (Universite Loustpeueer II, Montpellier, France); Magali Estrada del Cueto (CINVESTAV-IPN, Mexico); Yoshiaki Hagiwara (Sony Corporation, Japan); Gary Harris (Howard Univ., USA); W. Margaret Huang (Motorola, USA); Erin Jones (Oregon State University, USA); Kevin T. Kornegay (Cornell University, USA); Kei-May Lau (Hong Kong University of Science & Technology, Hong Kong); Leda Lunardi (Consultant, USA); Kwyro Lee (KAIST, Korea); Stephen A. Parke (Boise State University, USA); Jayasimha S. Prasad (Micrel Semiconductor Inc., USA); Marcel D. Profirescu (Technical University of Bucharest, Romania); Arlene A. Santos (National Semiconductor Corp, USA); Sunit Tyagi (Intel, USA); and Philip Wong (IBM, USA). The committee physically meets twice a year during the Spring and Fall AdCom meetings. Businesses are conducted via various communication means in between the two meetings.

One of the functions of the Committee is to maintain a vibrant Distinguished Lecturer (DL) Program for the Society. The DL Program exists for the purpose of providing EDS chapters with a list of quality lecturers who can potentially give talks at local chapter meetings and other occasions. In 1994, the DL Program was revamped to include more lecturers from around the world. Since then, the number of lectures performed for IEEE Sections/Chapters has more than tripled, with a count of 107 for the year of 2002. The listing of Distinguished Lecturers along with their topics and travel schedules is maintained at <http://www.ieee.org/organizations/society/eds/dl.html>. The listing is reviewed yearly and to remain on the roster, a Distinguished Lecturer must actively perform lectures.

To arrange for a lecture, the EDS chapters should contact the EDS DL directly. A general guideline for the visit, but not the absolute rule, is that the lecturer should be able to include the meeting site with an already planned travel schedule at a small incremental cost to the travel plan. Alternatively, a prior coincident travel plan would not be required if the lecturer is already located within an approximate fifty mile radius of a

(continued on page 5)

EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

2003

I. Adesida (2)
T. Hiramoto (1)
L. Lunardi (1)
A. A. Santos (2)
S. C. Sun (2)
H. S. P. Wong (1)
P. K. L. Yu (2)

2004

M. Estrada del Cueto (1)
K. F. Galloway (2)
S. J. Hillenius (2)
C. Jagadish (2)
J. K. O. Sin (1)
R. Singh (2)
N.D. Stojadinovic (1)

*2005

C.L. Claeys (2)
J.A. Dayton, Jr. (2)
M. Fukuma (2)
F.J. Garcia-Sanchez (1)
K. Lee (2)
J.J. Liou (1)
M. Ostling (2)
D.L. Pulfrey (2)

Number in parenthesis represents term.

* Members elected 12/02

IEEE Electron Devices Society Newsletter (ISSN 1074 1879) is published quarterly by the Electron Devices Society of the Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. Printed in the U.S.A. One dollar (\$1.00) per member per year is included in the Society fee for each member of the Electron Devices Society. Periodicals postage paid at New York, NY and at additional mailing offices. **Postmaster:** Send address changes to IEEE Electron Devices Society Newsletter, IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

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Upcoming Technical Meetings

2003 IEEE International Conference on Simulation of Semiconductor Processes and Devices (SISPAD)

The 2003 International Conference on Simulation of Semiconductor Processes and Devices (SISPAD 2003) will be held on September 3-5, 2003, at the Boston Marriott Cambridge Hotel in Cambridge, Massachusetts. In conjunction with SISPAD, a one-day strained silicon MOSFET modeling workshop will be held on Saturday, September 6th on the neighboring MIT campus.

SISPAD 2003, sponsored by the Electron Devices Society, provides an opportunity for the presentation and discussion of advances in the simulation of semiconductor devices, processes and processing equipment. The program consists of 20-minute oral presentations, with ample time for questions and answers. In addition, a poster session is planned, which provides a less formal venue and allows more in-depth interaction with the authors.

Paper topics may include:

- All aspects of device simulation, including transport in nano-structures, models of VLSI device scaling limits, quantum effects, and novel devices
- All aspects of process simulation, including both continuum and atomistic approaches
- Equipment, topography, and lithography simulation
- Interconnect modeling and algorithms
- Compact device modeling for circuit simulation; integration of circuit and device simulation
- User interfaces and visualization
- High performance computing, numerical methods and algorithms, including gridding
- Simulations of such devices as micro sensors, microactuators, optoelectronics devices, lasers, and flat panel displays
- Benchmarking, calibration, and verification of simulators

Along with the contributed papers, the SISPAD 2003 program will feature an exciting selection of invited speakers. A



partial list includes: Narain Arora (Cadence); Olaf Schenk (University of Basel); Ken Uchida (Toshiba); Michael Aziz (Harvard University); Craig Lent (Notre Dame); Arne Nylandsted Larsen (University of Aarhus); and Young June Park (Seoul National University).

The SISPAD conference is truly international, rotating between sites in North America, Europe, and Asia. Submissions range from the theoretical to the practical; from cutting edge advances in transport theory and materials science, to industrial applications of simulation and optimization. Attendees will have the opportunity to interact with worldwide leaders in TCAD research and development. The conference organizers strive to maintain an intimate conference (typical attendance is 150-200 people) with plenty of opportunities for informal discussion.

The one-day strained silicon-modeling workshop, which follows SISPAD, will take place on Saturday, September 6th on the MIT campus, which is within walking distance from the Marriott Hotel. The workshop is entitled "Modeling and Simulation Issues in Strained Si MOSFETs" and is being co-organized by Judy Hoyt and Dimitri Antoniadis of MIT. The workshop will begin with introductory overviews highlighting the basics of strained Si/relaxed SiGe materials and device technology. These reviews will be followed by a series of talks on strained silicon modeling and simulation issues

including: modeling of carrier transport in strained Si, the impact of strain and energy bands on performance scaling (Ion/Ioff) of strained Si MOSFETs, theory of strain relaxation and defects in strained Si and relaxed SiGe, process modeling (e.g. dopant and Ge diffusion), stress modeling in complex device structures, and device self-heating.

The SISPAD conference dinner will take place at the Boston Museum of Science, which has a long history

of presenting innovations in science and technology to the public. The main hall will be reserved for the exclusive use of SISPAD attendees, who will be able to stroll through the interactive exhibits during the reception and after dinner.

The conference site is located in Cambridge, the home of MIT and Harvard University, and just across the Charles River from Boston. The Boston area is an important cultural and academic center with a history that stretches back to the earliest days of the United States. There are a wide variety of attractions for the visitor, including historical sites, the nearby seashore, world-class museums, as well as restaurants and cafes of all types. Mass transit makes it easy to get around the city without a car.

For general information on SISPAD 2003 or the Strained Silicon-Modeling Workshop, please view our web site at <http://www-tcad.stanford.edu/sispad03>. If you require additional information on the conference or the one-day workshop, please contact the SISPAD 2003 Conference Manager, Ms. Fely Barrera, CISX 332, Stanford University, Stanford, CA, 94305 USA. TEL: +1 650 723-1349; FAX: +1 650 725 7731; E-Mail: fely@gloworm.stanford.edu.

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2003 IEEE International Symposium on Semiconductor Manufacturing (ISSM)

The International Symposium on Semiconductor Manufacturing (ISSM) is a world-wide forum specifically designed for semiconductor device manufacturers and suppliers. ISSM 2003 will be held Tuesday, September 30 – Thursday, October 2 at the San Jose, CA Fairmont Hotel.

Created more than a decade ago by key corporate executives, ISSM places an emphasis on sharing industrial experiences, technical solutions and opinions on the advancement of manufacturing science. ISSM has developed into one of the most respected and well-attended conferences in the industry. Now celebrating its twelfth anniversary, ISSM has a stellar conference planned for 2003.

Recognizing that manufacturing expertise is a cornerstone to corporate success, ISSM places a high priority on relevance, significance and applicability to wafer fabrication. Additionally, plenary presentations provide opportunities for presenting broad visions and outlining key challenges facing the industry.

This year's event covers timely and important topics like Factory Design; Manufacturing Strategy and Structure; Ultra Clean Technology; Process and Metrology Equipment; Process Materials Optimization; Environment, Safety and Health; Manufacturing Control and Execution; Process Control and Monitoring; and Yield Enhancement.

As an international conference, ISSM seeks the best talent from around the world. As many as fifty companies from fifteen countries are represented in a typical year. Conference presenters include manufacturing professionals, engineers, and managers from semiconductor, equipment, and materials companies as well as academic experts from universities and research



organizations. Thus, attendees are exposed to the latest technical information.

Each day is introduced with keynote addresses from renowned industry leaders. Last year's star-studded roster included Craig Barrett from Intel, Morris Chang from Taiwan Semiconductor Corporation, D.J. Dunn from ASML, Koichi Nagasawa from the Japanese Electronics and Information Technology Industries Association, Hector Ruiz from Advanced Micro Devices, and Ken Schroeder from KLA-Tencor. This year's speakers are certain to present analyses, strategies and demonstrations as they reveal their perspectives to an attentive and rapt audience.

Prospective authors are required to e-mail a two-page abstract that includes technical figures. To ensure high quality, abstracts are thoroughly and comprehensively peer reviewed by ISSM's international technical committees. Once accepted, authors work with a coach to complete their paper according to ISSM and IEEE guidelines. All papers are published in the conference proceedings. Oral presentations

are projected electronically at the conference and poster papers are presented in a highly interactive session. The formal Call for Papers, submission templates and other guidelines can be found at the ISSM web site: <http://www.issm.com>. The deadline for submitting an abstract is Friday, May 2, 2003.

In addition to the oral and interactive technical presentations, there will also be two separate workshops on Monday, September 29, which will focus on topics timely for our industry.

ISSM 2003 will be held at the Fairmont Hotel in San Jose, California. Located in the heart of Silicon Valley, the area offers a wide variety of interests to those visiting from out of state or out of the country. Extended time can be spent in

San Francisco, the Napa Valley wine country, Lake Tahoe, Yosemite National Park or the charming seaside towns of Carmel and Monterey.

Online conference registration and hotel information will be available on the ISSM web site in mid-July.

For registration or general information about ISSM, please visit our web site at <http://www.issm.com>, or contact Audrey Osborn at ISSM, c/o Maritz Travel Co, 1777 Botelho Dr., Suite 100, Walnut Creek, CA 94596, Phone: 925-287-5315, FAX: 925-287-5398, e-mail: issm@maritz.com.

IEEE (Electron Devices Society and Components, Packaging and Manufacturing Technology Society), Society of Applied Physics of Japan (JSAP), and Semiconductor Equipment & Materials International (SEMI) sponsor ISSM.

Bruce Sohn
Intel

Rio Rancho, NM, USA

2003 IEEE International SOI Conference (continued from page 1)

- ASIC, low power, high-voltage, RF, analog, Mixed mode, etc.)
- Double Gate/Vertical Channel Structures; Other Novel Structures
- Strained Si-Ge structures
- New SOI structures, Circuits, and applications (3-D integration, displays, microactuators - MEMS, microsensors, Drop-in RAMS, etc.)
- SOI reliability issues (hot-carrier effects, radiation effects, high-temperature effects, etc.)
- Manufacturability and process integration

- of SOI devices and circuits
- Alternate silicon-on-insulator material.

Abstracts for the SOI 2003 Conference should be submitted no later than May 2, 2003 to: c/o BACM, 520 Washington Blvd., #350, Marina del Rey, CA 90292 by mail or by e-mail to: bacm@attbi.com in PDF format. Late newspapers with exceptional merit will be considered for the Late News session if submitted on or before August 15, 2003.

Once again, the popular One-Day Tutorial Short Course will be offered preceding

the 2003 SOI International Conference. Tutorial Short Course instructors have many years of experience in the field of silicon-on-insulator technology. The course is intended to educate attendees in detail about current trends and issues in the SOI industry. The SOI 2003 Tutorial Short Course will focus on "physics-based design of SOI devices" to be given by Dr. J. Koga (Toshiba), Dr. J. Hoyt (MIT), Prof. M. Lundstrom (Purdue), and Dr. D. Frank (IBM). Participants will receive copies of all visual presentations.

The SOI Conference is held annually

2003 IEEE International Symposium on Compound Semiconductors (ISCS)

The 30th International Symposium on Compound Semiconductors (ISCS) will be held at the University of California, San Diego, CA August 25–27, 2003. The location of this Symposium rotates between Asia, Europe, and the United States. Last year the Symposium was held in Lausanne, Switzerland and the last time it was held in the United States in 2000 it was held in Monterey, CA,

The 30th ISCS will continue a series started in Reading, England in 1966. The first 20 symposia were held under the name Symposium on GaAs and Related Compounds. The current name reflects a broadening of the conference scope because of the emergence of a wide variety of compound semiconductors as vital materials for modern electronic and optoelectronic devices. As compound semiconductors continue to grow in importance in the commercial marketplace, ISCS provides a unique opportunity for researchers from industry and academia to gather and explore issues that are common among all compound semiconductor material systems, including materials synthesis, characterization, device design and processing, and applications.

The University of California at San Diego is a beautiful setting for ISCS. Since the Symposium is held when classes are not in session, the dormitories are available for attendees. The use of the dormitories will make it possible for more graduate students to attend the



symposium, and other attendees who desire to lower the cost of attendance. The casual atmosphere of holding the symposium on a college campus, along with a majority of the participants staying on campus, leads to a workshop-type environment with a real open exchange of results and ideas.

The conference includes oral and poster sessions of contributed papers, and invited papers on topics of current importance. The following is a partial list of the invited speakers:

Rob Beresford, Brown University, "Real-Time Studies of Strain Relaxation in InGaAs Heteroepitaxy"

Pallab Bhattacharya, University of Michigan, "Photonic Crystals"

Steve J. Pearton, University of Florida, "GaN Based Spintronics"

Rich Magno, NRL, "High-speed low-power Sb-based HEMTs and HBTs"

Haipeng Tang (National Research Council, Canada), "High frequency GaN/AlGaIn HFETs"

Cole Litton (Air Force Research Labs) "P-

doping of ZnO"

Toshio Nishida, NTT, "Nitride UV Emitters"

Keiichi Sakuno, Sharp Corporation "Advanced GaAs HBT Technology for 5GHz Power Amplifiers"

Primit Parikh, Cree Lighting, "Advances in GaN HFETs"

Keisuke Shinohara, Fujitsu Laboratories, "HEMTs with Ultrahigh Cutoff Frequency"

There are three major awards associated with ISCS. The first is the Heinrich Welker Award, which went to Professor

Hiroyuki Sakaki, University of Tokyo in 2002 for fundamental contributions to the study of semiconductor quantum (hetero) structures. The second award is the Quantum Devices Award, which went to Professor Yasuhiro Arakawa, University of Tokyo in 2002 for pioneering contributions to the development of quantum dot and quantum wire lasers. The third award is the Compound Semiconductor Symposium Young Scientist Award, which went to Professor Diana Huffaker, University of New Mexico in 2002 for seminal contributions to the development of oxide-confined vertical cavity lasers and 1,3 mm GaAs-based quantum dot lasers.

For more information, please see the symposium web site at <http://www.ieee.org/organizations/society/leos/LEOSCONF/ISCS2003/iscs03.htm>

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EDS Educational Activities Committee Report

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meeting site. Although the concept of the program is to have the lecturers minimize travel costs by combining their visits with planned business trips, EDS will help subsidize lecturers' travel in cases where few/no lecturers will be visiting an area and/or a chapter cannot pay for all the expenses for a lecturer trip.

The Committee is also encouraging Distinguished Lecturer clusters/mini-colloquia (Travel link Road Show) to remote areas. This concept generally involves the sending of about 2 or more DLs to travel to a region/chapter and present the latest developments in a particular field. The chapters/regions would be responsible for

handling all the arrangements of the event and only minimal financial support would be required of EDS and could be covered by the DL Program budget upon request. A successful mini-colloquia was organized in China last year with six lecturers traveling and presenting lectures in four cities (Nanjing, Shanghai, Xi-an and Beijing). This

year, a mini-colloquia is being held – in Brazil along with commemorations of the 50th year anniversary of the Society. Professor Jacobus Swart, the Chair of the local EDS Chapter, will host the next mini-colloquia in Brazil in September.

Reports on the DL Program are presented frequently in this magazine. For more information, please contact Laura Riello of the EDS Executive Office (l.riello@ieee.org). Feedbacks are actively solicited on the program from chapter chairs and members of the society.

A Graduate Student Fellowships Program (GSFP) was established in 2000 under the auspices of the Committee. Arlene Santos ably chaired the Sub-Committee handling the GSFP until the end of 2002. With her assuming other duties within the Society, the Sub-Committee is now chaired by Stephen Parke. The Society made its first Awards to three students from around the world in 2001. Since then the program has progressed, and four Awards were made last year with formal presentations made at the 2002 IEDM in San Francisco. The 2002 Awards went to David M. Fried of Cornell University, Ithaca, NY, USA; Jack Chen of

the University of Illinois at Urbana-Champaign, Urbana, IL, USA, Ofir Degani of the Technion-Israel Institute of Israel, Haifa, Israel; and Yung Fu Chong of The National University of Singapore, The Republic of Singapore. Reports on these winners are published in this edition of the Magazine. Advertisement for the next competition with the qualifications required and the remunerations are published in this Newsletter and other EDS publications. I am appealing to all our members to advertise the program among potential candidates and nominators so that students are aware of this opportunity for funding and recognition. With these awards, we hope to assist the very best students in our fields and also to make a positive impact on the future leaders of our Society.

Still in the spirit of recognition for young engineers, we bring to the notice of our membership the IEEE Kiyo Tomiyasu Award for "outstanding early to mid-career contributions to technologies holding the promise of innovative applications." This is a relatively new IEEE Technical Field Award; if you have suitable candidates, please con-

tact the Awards Chair of our Society, Al Mac Rae (a.macrae@ieee.org).

The Educational Activities Committee is revamping the Short Course Program of the Society with emphasis being directed at providing a service to industry. A list of a limited number of hot topics are being developed by Philip Wong (and some committee members) with the aid of our Technical Committees along with corresponding lecturers (by consent) from the Society. A flyer is being prepared for distribution to industry on these topics with the mode of operation being that interested parties will contact the lecturers directly and arrange to sponsor such short courses. Interested chapters can co-sponsor short courses with industry at their expense. This new mode of operation relieves some burden from the Executive Office.

If you have any suggestions or information on our current activities or other activities that you may want us to engage in, please contact me at i.adesida@ieee.org.

Ilesanmi Adesida
University of Illinois at Urbana-Champaign
Urbana, IL, USA

2003 IEEE International SOI Conference *(continued from page 4)*

throughout the United States. This year's conference is being held at Newport Beach Marriott Hotel & Tennis Club, Newport Beach, California. An advisory board and a technical committee, comprised of members from the society throughout the world, guide the conference. The 2003 advisory board members are Dimitris Ioannou (George Mason U), Harold Hovel (IBM), Jason Woo (UCLA), and Ted Houston (TI). The 2003 conference is organized by: General Chair, Mike Liu (Honeywell), Technical Program Chair, Mike Mendicino (Motorola); Local Arrangements Chair, James Burns (MIT/Lincoln Lab); Treasurer and Registration Chair, Chris Tretz; Rump and Poster Chair, Pierre Fazan (LEG/EPFL); and Short Course Chair, Toshiro Hiramoto (University of Tokyo); Publicity Chair, Rajiv Joshi (IBM); and technical committee members, Olivier Fanot (CEA-LETI), Fari Assaderaghi (Silicon Wave), George Cellar (SOITEC/USA), Jean-Pierre Colinge (UC Davis), Paul Fechner (Honeywell), William Jenkins (NRL), Shigeru Kawana-ka (Toshiba), Daniel Radack (DARPA), Hector Sanchez (Motorola), Sunit Tyagi (Intel), Rene Zingg (Phillips), Gerry Neudeck (Purdue), James Kuo (NTU), Atsushi Ogura (NEC), and Carlos Mazure (SOITEC).

The Newport Beach Marriott Hotel is designed to allow the perfect blend of work, rest and recreation. Excellent meet-

ing facilities designed to compliment any conference, comfortable guestrooms decorated with an American folk art theme, and an amazing array of recreational opportunities in the immediate area are the key features of the hotel.

Located midway between Los Angeles and San Diego, the Newport Beach Marriott (www.marriott.com/laxnb) offers the best balance of business and resort facilities with the friendliness & warmth that is characteristic of Marriott. The hotel's meeting facilities can accommodate meetings from 5 to 1,000. Whether traveling for business or pleasure, the Newport Beach Marriott Hotel and Tennis Club will make your stay a memorable one.

Overlooking the harbor and beyond to the ocean, the hotel boasts an accommodating location only 10 minutes from the John Wayne airport. Their tennis club offers 8-lighted courts with a staff of tennis pros available for lessons. There are many nearby challenging golf courses, side trips to Disneyland, Knott's Berry Park, or Catalina Island are available. Just relax in the whirlpool or take a refreshing swim in the pool. A complimentary shuttle service to the hotel from the John Wayne airport is provided. If you fly into Los Angeles International Airport, ground transportation is available, which includes regularly scheduled airport bus service, taxis, rental cars and shuttle vans.

Newport Beach is so rich in wonderful things to see and do that you could spend weeks here and still not manage to do and see them all. That said, however, it's also true that the area immediately surrounding the city is full of attractions well worth exploring - and that Newport Beach is centrally located near every major visitor attraction in Southern California, making this a singularly convenient spot from which to experience all of the attractions that the entire region has to offer. Various art galleries, islands, Disney world, Universal studio, and museums are within the driving distance. For more information about the area you can call the Newport Beach Conference and Visitors' Bureau at (800) 942-6278 or visit their web site: www.newportbeach-cvb.com. You can fax them at (949) 722-1612 or write to them at 3300, W. Pacific Coast Highway, Newport Beach, CA - 92663.

You may contact the 2003 IEEE International SOI Conference for additional information as follows: c/o BACM, 520 Washington Blvd., #350, Marina del Rey, CA 90292, Tel: 310-305-7885; Fax: 310-305-1038; Email: bacm@attbi.com or the SOI Conference website at <http://www.soiconference.org>.

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Society News

Announcement of Newly Elected EDS AdCom Members

On 7 December 2002, the EDS AdCom held its annual election of officers and members-at-large. The following are the results of the election and brief biographies of the members-at-large.

OFFICERS

The following individuals were re-elected for a one-year term beginning 1/1/2003:

President: *Steven J. Hillenius*, Agere Systems

Vice President: *Hiroshi Iwai*, Tokyo Institute of Technology

Treasurer: *Paul K.L. Yu*, University of California at San Diego

Secretary: *John K. Lowell*, Consultant

ADCOM MEMBERS-AT-LARGE

A total of eight persons were elected to three-year terms (2003-2005) as members-at-large of the EDS AdCom. Six of the eight individuals were re-elected for a second term, while the other two were first-term electees. The backgrounds of the electees span a wide range of professional and technical interests.

SECOND TERM ELECTEES:



COR L. CLAEYS was born in Antwerp, Belgium. He received the Electrical-Mechanical Engineering and the Ph.D. degree from the KU Leuven, Belgium. From 1974 till 1984 he was respectively research assistant and staff member of the ESAT Laboratory (KU Leuven). In 1984, he joined IMEC as Head of Silicon Processing, responsible for process development and applications in CCDs, CMOS, non volatile memories, SOI-CMOS and Bi-CMOS. Since 1990 he is Head of the group on Radiation Effects, Cryogenic Electronics and Noise Studies. Furthermore, since 1990 he is a Professor at the KU Leuven.

His main interests are in device physics, low temperature electronics, radiation physics, submicron silicon technologies, and defect engineering. He is author or co-author of over 500 publications in scientific journals, eight book chapters, and over 400 presentations at international conferences. He co-edited a book on "Low Temperature Electronics" and wrote one on "Radiation Effects in Advanced Semiconductor Materials and Devices". He is a Senior Member of IEEE and a Fellow of the Electrochemical Society. In 1999, he was elected as Academician and Professor of the International Information Academy. He is an Associate Editor of Journal of the Electrochemical Society. He was the founder of the IEEE Electron Devices Benelux Chapter, ED Chapter coordinator for Region 8 and Chairman of the IEEE Benelux Section.



JAMES A. DAYTON, JR. BSEE, Illinois Institute of Technology; MSEE, University of Iowa; PhD, University of Illinois. Cornell Aeronautical Lab, Buffalo, NY, 1965-1967; plasma diagnostics. NASA Lewis Research Center, Cleveland, OH, 1967-1998; researcher and supervisor in the area of efficiency enhancement of the traveling wave tube (TWT) with particular emphasis on computer modeling; developed TWTs for Mars Observer and Cassini. Hughes (Boeing) Electron Dynamics, Torrance, CA, 1998-2001; Director of Technology; developed TWTs for communications satellites. Genvac Aerospace, Cleveland, OH, 2001-present; Director of Technology; application of CVD diamond to millimeter and sub millimeter vacuum devices. Working Group A of the DoD Advisory Group on Electron Devices, 1986-1998. Editor for Vacuum Devices, *Transactions on Electron Devices*, 1994-1999. Chair, EDS Technical Committee for Vacuum Devices, 1997-present. EDS AdCom, 2000-present. General Chair,

first International Vacuum Electronics Conference, May 2000. Robert L. Woods Award for leadership in vacuum electronics technology, Undersecretary of Defense, May 2000.



MASAO FUKUMA received the B.E., M.E. and Ph.D. degrees in Instrumentation Engineering from Keio University, Yokohama, Japan in 1972, 1974 and 1986, respectively. In 1974, he joined NEC Central Res. Labs., where he worked on scaled down MOSFETs, TCAD and CMOS logic LSIs. Since 2001, he has been Vice President of NEC Laboratories, NEC Corp., where he is managing research and development on advanced electron devices including silicon VLSIs and compound semiconductor devices. Dr. Fukuma has filled various professional committee posts such as the Chairman of the VLSI Technology Symposium and an Editor of *IEEE Transactions on Electron Devices*.



KWYRO LEE received the B.S. Degree in Electronics Engineering from Seoul National University in 1976 and the M.S. and Ph.D. degrees from the University of Minnesota, Minneapolis in 1979 and 1983, respectively. After graduation, he worked as an Engineering General Manager in GoldStar Semiconductor Inc. Korea, from 1983 to 1986. In 1987, he joined the Department of Electrical Engineering, KAIST, where he is now a Professor. He has been working as the Director of MICROS (Micro Information and Communication Remote-object Oriented Systems) Research Center since 1997. His research interests are focused on RF and baseband device and circuit technologies for mobile multimedia. He is a Senior Member of IEEE and a Life Member of IEEK.



MIKAEL OSTLING received the MSc degree in engineering physics and the PhD degree from Uppsala University in 1980 and 1983, respectively. He has been with the faculty of EE of KTH, Royal Institute of

Technology in Stockholm, Sweden since 1984 where he is head of the department of microelectronics and information technology and holds a position as professor in solid state electronics. He has been a senior visiting Fulbright Scholar with the center for integrated systems at Stanford University, and a visiting professor with the University of Florida, Gainesville. His research interests are silicon/silicon germanium devices and process technology for very high frequency, as well as device technology for wide bandgap semiconductors with special emphasis on silicon carbide and nitride based structures.

IEEE activities include being ED Sweden Chapter Chair, former EDS Newsletter Editor, SRC Coordinator in Region 8, and BCTM Executive Committee Member.



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

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

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

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

FIRST-TIME ELECTEEES:



FRANCISCO J. GARCIA-SANCHEZ was born in 1947 in Madrid. He received his Ph.D. degree in 1976 from the Catholic University of America, Washington D.C. Since then he has been with the Depart-

ment of Electronics at Universidad Simón Bolívar in Venezuela. Throughout his professional life he has been very active locally and internationally in the

promotion, planning, organization, direction, and administration of numerous higher education and research related endeavors. His main present research interest is compact modeling. He is currently the Vice-Chair of the EDS Subcommittee for Regions & Chapters for Latin America, and chairs IEEE-Venezuela CAS/ED/PEL Joint Chapter.

JUIN J. LIU received the B.S. (honors), M.S., and Ph.D. degrees in electrical engineering from the University of Florida, Gainesville, in 1982, 1983, and 1987, respectively. In 1987, he joined the Department of Electrical and Computer Engineering at the University of Central Florida, Orlando, Florida, where he is now a Professor. Dr. Liou has published six textbooks (another in progress), more than 180 journal papers (including 11 invited articles), and more than 130 papers (including 35 keynote or invited papers) in international and national conference proceedings. He has been awarded more than \$4.0 million of research grants, and he is an associate editor for the *Simulation Journal* and a regional editor for the *Microelectronics Reliability*. Dr. Liou received ten different awards on excellence in teaching and research from the University of Central Florida and two different awards from the IEEE Electron Device Society. Dr. Liou is an IEEE EDS Distinguished Lecturer, an IEEE EDS Administrative Committee Member, and a Senior Member of the IEEE.

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

William R. Cherry Award



Dr. Ajeet Rohatgi

This award is named in honor of William R. Cherry, a founder of the photovoltaic community, and was instituted in 1980, shortly after his death. The purpose of the award, which is presented at each Photovoltaic Specialists Conference (PVSC), is to recognize engineers and scientists who have made significant contributions to the science and/or technology of PV energy conversion, with dissemination by substantial publications and presentations. The William R. Cherry award was presented to Dr. Ajeet Rohatgi at the 30th PVSC which was incorporated into the 3rd World Photovoltaic Solar Energy Confer-

ence held in Osaka, Japan, during the week of May 12th.

Dr. Ajeet Rohatgi received the B.S.T.(E.E.) degree from the Indian Institute of Technology in 1971, the M.S.(Materials Engineering) degree from the Virginia Polytechnic Institute and State University in 1973, and the Ph.D. (Metallurgy and Materials Science) degree from Lehigh University in 1977. He was a Fellow Engineer for the Westinghouse Research and Development Center, Pittsburgh. He worked on impurity effects on silicon solar cells, on semiconductor and device characterization, on impurity-induced recombination centers in semiconductors by deep level transient spectroscopy, in design and fabrication of photovoltaic and MOS devices, on physics and modeling of high efficiency solar cells, and high-energy particle radiation effects on power devices.

Professor Rohatgi's current research interests include modeling, design, fabrication and characterization of high efficiency silicon solar cells; materials for high performance photovoltaic and power devices; basic understanding of carrier lifetime limiting mechanisms in semiconductors; and materials for VLSI circuits.

Dr. Rohatgi is the director of the University Center of Excellence for Photovoltaic Research and Education (UCEP) at Georgia Tech. The UCEP is a Department of Energy center established to advance the science of photovoltaic devices and systems, to increase the availability of education in the area of photovoltaics, and to improve university-industry collaboration.

John D. Meakin
Consultant
Weybridge, VT, USA

Status Report from the 2002 Graduate Student Fellowship Winners

In 2000, the IEEE approved the establishment of the Electron Devices Society Graduate Student Fellowship Program. The Program is designed to promote, recognize, and support graduate level study and research within the Electron Devices Society's fields of interest: which include: Compact Modelling, Compound Semiconductor Devices and Circuits, Device Reliability Physics, Displays, Electronic Materials, Microelectromechanical Systems, Nanotechnology, Optoelectronic Devices, Photovoltaic Devices, Power Devices and ICs, Semiconductor Manufacturing, Technology Computer-Aided Design, Vacuum Devices, and VLSI Technology and Circuits. In deference to the increasing globalization of our Society, at least one fellowship is to be awarded to students in each of three geographical regions: Americas, Europe/Mid-East/Africa, and Asia & Pacific.

In July 2002, EDS announced the winners of the Fellowship awards. The four winners are: Jack Chen of the University of Illinois at Urbana-Champaign, Urbana, IL, USA, Yung Fu Chong of the National University of Singapore, The Republic of Singapore, Ofir Degani of Technion-Israel Institute of Technology, Haifa, Israel and David Michael Fried of Cornell University, Ithaca, New York, USA. The winners are pursuing distinctly different research topics for their doctoral degrees. The following are brief progress reports written by the award winners.



Jack Chen

Jack Chen is a student in the Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. His supervisor is Professor Chang Liu.

I am very grateful to have been awarded the EDS Graduate Fellowship last year and it has been an honor to be recognized by such a prestigious award. I regret not being able to attend the award presentation during the IDEM conference. However, being right up against final exams week

and abstract deadline gave me no time for a break from scholastic obligations.

Since winning the award, I have wrapped up my research on micro-discharge array and published a paper on that in the October 2002 IEEE Journal of MEMS. I have continued my research on 3-D assembled hot-wire anemometer. The results were presented in the ASME International Mechanical Engineering Congress and Exposition in New Orleans last November and published in the April 2003 Journal of Aerospace Engineering.

I have also expanded the scope of my research in MEMS sensors beyond hot-wire anemometry. I have developed a bio-inspired artificial hair cell sensor with integrated strain gauge and used it to measure air/water flow. The results from that research were accepted for an oral presentation in the upcoming Transducers '03 conference in Boston. We are also starting a collaboration to use such sensors in an underwater vehicle. With the same 3-D assembly process, I've also developed and tested a miniaturized pirani vacuum gauge. I'm currently finishing a paper on that subject. Our research on 3-D assembled MEMS sensors has been going well and maturing.

The EDS Graduate Fellowship has been very useful to me in that I have been able to meet my expenses over the last year and was able to start an individual investment account using the cash award. Overall, I'm very thankful for the EDS Graduate Fellowship, beyond the monetary award. I know the prestige of the award will help my future career pursuit and is something I'll wear as a badge of honor.



Yung Fu Chong

Yung Fu Chong is a student in the Department of Electrical and Computer Engineering at the National University of Singapore (NUS), Singapore. His supervisors are Associate Professor Kin-Leong Pey and Associate Professor Andrew Wee.

Yung Fu Chong's research interests are related to electronic materials and semiconductor devices, with focus on the front-end processing of complementary metal-oxide-semiconductor (CMOS) devices. He has conducted research on the fabrication of ultra shallow p+/n junctions and self-aligned silicides using laser thermal processing (LTP). Laser thermal processing of ultra shallow junctions typically involves the preamorphization of the silicon surface, followed by the melting of the amorphized regions (and the substrate) using a pulsed excimer laser. The extent of dopant diffusion is primarily controlled by the melt depth and due to the near-zero thermal budget of the LTP; an extremely high degree of dopant activation is achieved upon recrystallization. In the formation of ultra shallow junctions, he has also addressed the issue on the transient enhanced diffusion (TED) of boron during a post-LTP rapid thermal anneal. His research on the LTP of ultra shallow junctions requires a sound knowledge of the fundamentals of laser-solid interactions, as well as the defect formation and annihilation processes during thermal annealing.

Another area of his research relates to alternative gate activation technologies, their process integration issues and impact on the depletion of carriers at the polycrystalline silicon (poly-Si) gate/gate dielectric interface (poly-depletion). It is known that the poly-depletion effect increases the effective electrical thickness of the gate dielectric and results in drive current degradation. He has recently reported the study on the reduction of poly-depletion in sub-0.1 μm CMOS devices with the use of advanced gate structures and laser thermal processing. This is a continuation of the work that he carried out at Agere Systems, USA (formerly Bell Laboratories, Lucent Technologies), where he spent nearly one year (in 2001) as a visiting scholar. He has successfully developed a process flow (which involves LTP) to form highly doped poly-Si gated MOS devices with ultra thin gate dielectrics. It is found that the poly-depletion effect in these devices is sub-

stantially reduced after subjecting the wafers to laser irradiation, and that the gate oxide reliability is not degraded even after LTP at high fluencies. This process flow is applicable to both PMOS and NMOS devices (with boron and arsenic-implanted gates, respectively); hence it is compatible with the dual-doped gate process in the fabrication of advanced CMOS devices.

He has authored or co-authored more than 10 internationally reviewed journals and conference proceedings. He also holds 5 United States patents, with several more pending. In 2002, he received the University Graduate Fellowship award from the National University Singapore for his outstanding research and academic results. Recently, he delivered a technical presentation at IMEC, Belgium.



Ofir Degani

Ofir Degani is at the final year of his Ph.D. studies at the electrical engineering department, Technion Israel institute of technology. His research interests are in the actuation and sensing of motion of micro machined deformable elements that are the most basic mechanisms required in many in Micro-opto-electro-mechanical-systems (MOEMS). Therefore, the understanding of the physical phenomena governing these mechanisms is crucial in the design process and operation of MOEMS devices. His research focuses on two such mechanisms: electrostatic actuation and an in-plane optical sensing.

An electrostatic actuator is a free-space capacitor with deformable electrodes, controlled either by applying voltage or charge. Due to the nonlinear nature of the electromechanical response of electrostatic actuators, it is often characterized by an inherent instability, referred to as Pull-In. The Pull-In phenomenon is often used to achieve binary operated devices and should be avoided in analog applications. Therefore, it is crucial to capture the effect of various parameters of the device on the Pull-In instability. Several aspects of the Pull-In problem have been studied:

1) A novel methodology is used to derive

the "voltage-free" equilibrium equations and the general Pull-In equations of electrostatic actuators driven by a single energy source. This approach enables analytical analysis of various geometrical effects (e.g., fringing field, non-linear suspensions, mode coupling) on the Pull-In parameters. Moreover, using this approach it is proven that charge-controlled electrostatic actuators always have larger travel range than voltage-controlled actuators.

- 2) A novel Displacement Iterations Pull-In Extraction (DIPIE) algorithm for distributed electrostatic actuators (e.g., clamped-clamped beam) is constructed. This algorithm is shown to be up to a 100 times faster and far more consistent than the current state of the art voltage iterations algorithm implemented in MEMS-CAD tools.
- 3) The above methodology is extended to analyze electrostatic actuators driven by K uncoupled voltage sources. The model show that these actuators no longer have a single Pull-In state, but an infinite number of Pull-In states that constitute a K-1 dimensional Pull-In hyper-surface. Furthermore, a novel robust \square -lines strategy for extraction of the Pull-In hyper-surfaces was developed.
- 4) Various electrostatic actuators with single and multiple electrodes have been implemented and characterized. A novel methodology for measuring Pull-In hyper-surfaces was demonstrated. The measured electro-mechanical response and Pull-In parameters show very good agreement with the theoretical predictions.
- 5) A novel micro mirror device with post-fabrication continuously re-adjustable Pull-In instability was designed and implemented using multiple electrodes technology. This is in contrast to prevalent electrostatic micro mirrors in which the pull-in instability is set and cannot be changed once the device is fabricated.

Sensing of motion in MOEMS is a very challenging task. The sensor should be small in dimensions as well as in power consumption, and at the same time, should resolve sub-angstrom dis-

placements. In high-end applications the displacement detector should even resolve sub-pico-meter ($10^{-2}[\text{\AA}/\div\text{Hz}]$) displacements.

In this research a novel method for sensing in-plane displacement of deformable elements is developed. The method is based on a differential optical approach where two arrays of photodiodes (integrated on a CMOS chip with their readout electronics) detect the motion of a matching suspended grid. A model for this sensor considering the opto-mechanical model as well as the noise sources of the system was derived. The model predicts that using this method a sub-pico-meter ($10^{-2}[\text{\AA}/\div\text{Hz}]$) displacement can be resolved. This is in contrast to the previously studied optical approach which used only two photodiodes and was limited to $>0.5[\text{\AA}/\div\text{Hz}]$.

To this end, an accelerometer employing this optical sensing method was implemented. Preliminary measurements exhibited a total noise level of $\sim 2[\text{g}/\div\text{Hz}]$ with a natural frequency of $\sim 500[\text{Hz}]$. This indicates that the total noise equivalent displacement is $\sim 10[\text{m}\text{\AA}/\div\text{Hz}]$. Further experimental work on improved designs is currently carried out.

Ofir has authored or co-authored more than 40 journal and international conference papers, 1 patent and 4 patents pending. He is the recipient of the prestigious Charles Clore scholarship as well as the VATAT scholarship.



David Michael Fried

David Michael Fried

Advanced Integrated Microsystems (AIMS) Research Group

Since receiving the Electron Devices Society Graduate Student Fellowship, I have completed one full process sequence and I am nearing the completion of my second process sequence fabricating N-Type Independent Gate FinFET devices. The results from the first set of devices show the correct functional behavior for a double gate device. These results have been submitted for

consideration to the Device Research Conference (DRC). Several process improvements have been made for the second sequence in an attempt to improve upon the results of the first run. These process improvements will not only improve the electrical behavior of the devices, but also allow for further processing including CMOS integration. In the coming months, I will be completing process runs to produce P-Type Independent Gate FinFETs and to attempt CMOS integration for Independent Gate FinFET circuit applications.

I have also ported a double-gate compact model into a SPICE environment to allow for circuit design using a model that approximates the performance of the devices I have fabricated and those I plan to fabricate. I am currently working on several novel Analog and RF circuit designs to leverage the unique qualities and performance characteristics of the Independent Gate FinFET.

The Electron Devices Society Graduate Student Fellowship has provided me with multiple benefits. By attending the International Electron Devices Meeting

in December of 2002 to accept the award, I was able to gain a larger view of the research being conducted in Double Gate devices around the world. I was able to meet with many of the double gate researchers and discuss the current state of their work. This helped me to improve the focus of my efforts here at Cornell. The award has also helped to defray some of my expenses during my research.

Ilesanmi Adesida

*University of Illinois at Urbana-Champaign
Urbana, IL, USA*

EDS Administrative Committee Election Process

The Members-at-Large (MAL) of the EDS AdCom are elected for staggered three-year terms, with a maximum of two consecutive terms. The 1993 Constitution and Bylaws changes mandated increasing the number of elected MAL from 18 to 22, and required that there be at least two members from both IEEE Region 8 (Europe, Mid. East & Africa) and Region 10 (Asia & Pacific). It is also required that there be at least 1.5 candidates for each opening. From 2000 to 2002, seven, seven and eight positions were filled, respectively. In 2003, seven positions will be filled.

The election procedure begins with the announcement and Call For Nominations

in the EDS Newsletter. The slate of nominees is developed by the EDS Nominations Committee and includes the non-Committee and self-nominations received. Nominees are asked to submit a two-page biographical resume in a standard format. Nominations are closed on 15 October, and the biographical resumes are distributed to the 'full' voting members of AdCom prior to the December AdCom meeting. The election is then held after the conclusion of the meeting. The nominees do not need to attend the AdCom Meeting/Election to run. On the other hand, if you are elected, you are expected to attend the two AdCom meetings a year. In general, the travel and accommodation costs to

attend these meetings are borne by the elected member.

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

Cary Y. Yang

*EDS Nominations & Elections Chair
Santa Clara University
Santa Clara, CA, USA*

Call For Nominations - EDS AdCom

The Electron Devices Society of the IEEE 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 2003, the election will be held after the AdCom meeting on Sunday, 7 December. Electees begin their term in office on 1 January 2004. For your information, the nominees do not need to attend the AdCom Meeting/Election to run.

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 is expected to attend the two annual AdCom meetings. In general, the travel and accommodation costs to attend these meetings are borne by the elected member.

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

to the EDS Executive Office Administrator, Laura J. Riello in time to be received by the deadline of 15 October 2003. Her contact information is the same as W.F. Van Der Vort's, included on page 2. 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, Cary Y. Yang (see page 2 for contact information).

Call for Nominations for the EDS Chapter of the Year Award

The EDS Chapter of the Year Award is given each year based on the quantity and quality of the activities and programs implemented by the chapters during the prior July 1st – June 30th period. Nominations for the award can only be made by Chapter Partners, SRC Chairs/Vice-Chairs, or self-nominated by Chapter Chairs.

The winning chapter will receive a certificate and check for \$1,000 to be presented at the International Electron Devices Meeting (IEDM).

The schedule for the award process is as follows:

The schedule for the award process is as follows:

Action	Date
Call for Nominations E-Mailed to Chapter Chairs, Chapter Partners, SRC Chairs & SRC Vice-Chairs	6/1
Deadline for Nominations	9/15
Regions/Chapters Committee Selects Winner	Early-October
Award given to Chapter Representative at IEDM	First week of December

EDS CHAPTER SUBSIDIES FOR 2004

The deadline for EDS chapters to request a subsidy is 1 September 2003. For 2003, the EDS AdCom awarded funding to 60 chapters, with most amounts primarily ranging from US\$250 to US\$1,000. In June, Chapter Chairs were sent an e-mail notifying them of the current funding cycle and providing them with a list of guidelines. In general, activities which are considered fundable include, but are not limited to, membership promotion travel allowances for invited speakers to chapter events, and support for student activities at local institutions. Subsidy requests should be sent via e-mail, fax or mail to the EDS Administrator, Laura J. Riello. Her contact information is the same as W.F. Van Der Vort's, included on page 2. Prior to the submission of the subsidy request, the Chapter Chair must submit a chapter activity report to its respective SRC Chair and EDS Newsletter Editor by July 1. This report should include a general summary of chapter activities (one to two pages) for the prior July 1st - June 30th period. You must also attach a copy of the activity report to your chapter subsidy request. Final decisions concerning subsidies will be made by the EDS Regions/Chapters Committee in early November. Subsidy checks will be issued by late January.

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SRC Chair and EDS Newsletter Editor by July 1. This report should include a general summary of chapter activities (one to two pages) for the prior July 1st - June 30th period. You must also attach a copy of the activity report to your chapter subsidy request. Final decisions concerning subsidies will be made by the EDS Regions/Chapters Committee in early November. Subsidy checks will be issued by late January.

EDS Web Site Gets a New Look



Arlene A. Santos

Christopher Salicco and Gregg Mariconda of the EDS Executive Office have worked diligently over the past year on major renovations to the EDS website. These improvements were designed to improve the navigation within the site and to provide additional information that is easily accessible to the EDS member.

We have upgraded all the pages to the new IEEE template. Pages were created with member contact information for several Standing Committees. There is now a news section for each EDS subject

area, which is linked from their respective home pages. We have successfully updated all the EDS DL contact information and added available abstracts. All the EDS Meetings forms are now available on-line or as Word attachments upon request.

The EDS Photo Gallery has been revised to include the 50th Anniversary Photos as a slide show and the Millennium Medals Luncheon photos have been revamped.

In order to ensure that the site contains the most current information, we have come up with a maintenance schedule, which includes three major revisions a year as well as monthly updates on information such as meet-

ings calendars and other items that are too important to wait until the scheduled update.

Chris and Gregg are continuing to work on enhancements to the site, including upgrading the EDS Site map, as well as new projects that surface.

Come and check out our new look for yourself: <http://www.ieee.org/organizations/society/eds/>. We look forward to comments and suggestions to continuously make our site better.

Arlene A. Santos
EDS Web Site Coordinator
National Semiconductor Corporation
Annapolis, MD, USA

EDS Distinguished Lecturer Program - Lecturers Residing in Eastern USA & Canada (Regions 1-3 & 7)

The EDS Distinguished Lecturer Program exists for the purpose of providing EDS Chapters with a list of quality lecturers who can potentially give talks at local chapter meetings. To arrange for a lecture, the EDS chapters should contact the Distinguished Lecturer directly. A general guideline for the visit, but not the absolute rule, is that the lecturer should be able to include the meeting

site with an already planned travel schedule at a small incremental cost to the travel plan. Alternatively, a prior coincident travel plan would not be required if the lecturer is already located within an approximate fifty mile radius of a meeting site. Although the concept of the program is to have the lecturers minimize travel costs by combining their visits with planned business

trips, EDS will help subsidize lecturer travel in cases where few/no lecturers will be visiting an area and/or a chapter cannot pay for all the expenses for a lecturer trip. For a full listing of EDS Distinguished Lecturers and travel plans please contact Laura Riello of the EDS Executive Office (Tel: 1-732-562-3927, Fax: 1-732-235-1626, E-Mail: l.riello@ieee.org).

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• Modeling, Characterization, and Design of Electrostatic Discharge (ESD) Protection Structures for Microchips
• Empirical Modeling of Reliability of RF CMOS Transistors

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• Semiconductor Devices and Technologies for Future Telecommunication Systems
• Lightwave Communication Systems: Where is the Electronics?

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• Silicon technology - future trends from a system application perspective

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• High Voltage Integrated Circuits
• Power Ics in Telecommunications
• Dielectric Isolated Integrated Circuits
• Silicon-On-Insulator Technologies and Devices
• Reliability Issues in High Voltage ICs

- Event-Upset (SEU) Radiation Hardening of DMOSs BCDMOS Technologies

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- Solid state lighting
- Terahertz radiation Detection and Emission by High
- Electron Mobility Transistors

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- Device, Materials, and Physics Issues

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- Broad Band (UV to IR) High Speed Pin, and Schottky Detectors and APDs

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- Carbon Nanotube Electronics: Potential, Reality, Critique
- Engineering DNA Conductivity for Future Electronics and Computing
- Y-Junction Carbon Nanotubes: Synthesis and Device Functions
- Binary Super Gratings - A New Enabling Concept for Wavelength Selective Optics
- Nanoelectronics - evolution from CMOS to Nanotubes and DNAs

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IEDM Short Courses on Videotape

The 2002 IEEE International Electron Devices Meeting was held this past year in San Francisco, CA. The two short courses that were offered at this meeting were titled, "RF Device Technologies for Communication Systems" and "The Future of Semiconductor Manufacturing". These short courses are now available on videotape to purchase through IEEE Customer Service.

RF Device Technologies for Communication Systems

Presented by: Bin Zhao, Skyworks Solutions, Newport Beach, CA; Asad Abidi, University of California, Los Angeles, CA; Larry Larson, University of California, San Diego, CA; David Harnme, IBM, Essex Junction, VT; Michael Schroter, University of Technology,

Dresden, Germany; Domine Leenaerts, Philips Research Labs, Eindhoven, The Netherlands

Order information:

Title: RF Device Technologies for Communication Systems
NTSC Order No. EV6987 NTSC ISBN 0-7803-7643-9
PAL Order No. EV6988 PAL ISBN 0-7803-7644-7
IEEE Member Price: \$380.00
List Price: \$450.00

The Future of Semiconductor Manufacturing

Presented by: Jack Y.C. Sun, TSMC, Hsin-Chu, Taiwan; C. Rinn Cleavlin, Texas Instruments, Dallas, Texas; N. Kobayashi, SELETE, Tsukuba, Japan; J.J. Lin, TSMC,

Hsin-Chu, Taiwan; P.K. Mozumder, PDF Solutions, Richardson, TX;

Order information:

Title: The Future of Semiconductor Manufacturing
NTSC Order No. EV6989 NTSC ISBN 0-7803-7645-5
PAL Order No. EV6990 PAL ISBN 0-7803-7646-3
IEEE Member Price: \$380.00
List Price: \$450.00

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Congratulations to the EDS Members Recently Elected to IEEE Senior Member Grade!

Dev Alok
Judy An
Bruce A. Bernhardt
Manfred Berroth*
Dhrub Biswas*
Karl F. Bohringer
Colombo Bolognesi
Bi-Shiou Chiou
Pierre Fazan

Predrag Habas
Miltiadis Hatalis*
Eamon S. Hynes
V. Krozer*
Kae Dal Kwack
Borisas Levitas
Wee Teck Lim*
Michael Mick*
Linda Milor

Om P. Nangia
Binod Bihari Pal
Nestore Polce
William J. Rummel
Subhash Chander Rustagi
Sei-Hyung Ryu*
Seetharaman Sridhar
Inchae Song
Gerhard Stelzer

Sehat Sutardja
Yu-Chong Tai
Gabriel Vasilescu
Richard B. Watson, Jr.
John T. Yue
Gang Zou*

* = Individual designated EDS as nominating entity

If you have been in professional practice for 10 years, you may be eligible for Senior Membership, the highest grade of membership for which an individual can apply. New senior members receive a wood and bronze plaque and a credit

certificate for up to US \$25 for a new IEEE society membership. In addition, a letter will be sent to employers, recognizing this new status.

For more information on senior member status, visit http://www.ieee.org/membership/grades_cats.html#SENIORMEM

To apply for senior member status, fill out an application at <http://www.ieee.org/organizations/rab/md/smelev.htm>

Regional and Chapter News

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

ED Mid-Hudson Valley

- by Michael Hargrove

The IEEE Electron Devices Mid-Hudson Valley Chapter sponsored a meeting in January 2003 in conjunction with the local IEEE Section. The meeting was extra special since we had two different speakers discussing their work in high-speed communication chip design and non-volatile memory design. The meeting was very well attended.

The first speaker was Dr. David Meltzer of Epson Research and Development located in Wappingers Falls, NY. Dr. Meltzer discussed the background of Epson R&D in terms of when and why the design center was opened, and also shared his view of the challenges of high-speed communication chip design, specifically Serdes (serializer-deserializer). He presented a very comprehensive overview of not only the design challenges, but also the challenges of incorporating some analog circuits within the framework of a digital technology. Dr. Meltzer also elaborated on the testing requirements of such high-speed chips and the challenges of incorporating on-chip testing features, as well as bench testing constraints.

The second speaker was Dr. Seiki Ogura, who is the founder and president

of Halo LSI, Inc. The company is also located in Wappingers Falls, NY and focuses on the development and licensing of its flash memory. Prior to his current position, Dr. Ogura worked as a technologist at IBM Semiconductor Research and Development Center in Fishkill, NY for twenty-five years. He and his group made several contributions to CMOS technology development, some of which are: lightly doped drain FET, sidewall spacer technique, shallow trench isolation, and damascene metal processing. He is an IEEE Fellow and recipient of the Morris Liebman award. He has also served as an advisor to the European Consortium for the ULTRA/ESPIRIT projects to develop 0.18 micron and 0.1 micron technology in Europe. Dr. Ogura discussed the physics of flash memory and shared his experience of starting a small high-tech company.

ED Northern Virginia/Washington

- by Murty Polavarapu

The Electron Devices Northern Virginia/Washington Chapter held its March meeting jointly with the Lasers & Electro-Optics Society (LEOS) chapter on March 31, 2003. Dr. John David from the University of Sheffield, a Distinguished LEOS Lecturer, delivered a talk on recent developments in realizing low excessive noise in Avalanche Photo Diodes (APDs). Recent results at the University of Sheffield and the University of Texas (Austin) have shown that low excess noise can be obtained in homo-junction structures simply by utilizing thin avalanching regions. He also discussed how in addition to reducing the excess noise, thin avalanching widths offer APDs with other advantages such as lower operating voltages, better temperature stability and predicted enhanced speed of operation.

The Chapter held its January meeting jointly with the local Microwave Theory and Techniques Society (MTTS) chapter on January 9, 2003. Dr. Baruch Levush of the Naval Research Laboratory addressed the gathering on "Vacuum Electronics for the 21st Century".

He explored the history and diversity of this remarkable technology, with emphasis on advances in vacuum elec-

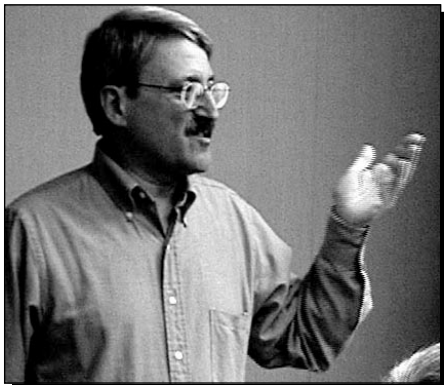
tronic amplifiers, including the Microwave Power Module (MPM), Gyro-amplifiers and Multiple Beam Amplifiers that have been enabled by the ongoing development of physics-based modeling and simulation tools. He stated that although some view it as a stodgy remnant of an old technology, soon to be supplanted, it has been and, as new requirements emerge; will continue to be the enabling technology for entire classes of high-power high-frequency amplifiers with the most demanding specifications for use in both military and commercial systems.

— Murty Polavarapu, Editor

CAS/ED/SSC Ottawa Chapter

- by Vijay K. Arora

Professor Vijay K. Arora, Partner for the CAS/ED/SSC Ottawa Chapter, visited Ottawa on March 3, 2003. He also visited the CAS/ED/CPMT/LEO Toronto and ED/SSC Kitchener-Waterloo chapters on March 5 and 6, respectively. He gave a DL talk entitled, "Hot Electrons: A Myth or Reality?" at each of the three chapters. During this talk, he apprised the candidates on mobility and diffusion coefficient degradation in a high electric field (see Applied Physics Letters, Volume 80, Number 20, May 20, 2002, pp. 3763-65). He discussed how electron temperature can be extracted from these expressions depending on the context of the experiments. In particular, he described the modification in the Einstein relation between the diffusion



Dr. David Meltzer of
Epson Research and Development



Professor Vijay K. Arora visits Canadian Chapters
under the DL/Partners Program

coefficient and the mobility as a result of the presence of high electric field. More information is available from Professor Aroa at varora@wilkes.edu. The talk was sponsored by the Electron Devices Society DL program with local hospitality provided by the host.

— Arokia Nathan, Editor

ED South Brazil

- by J. W. Swart

A chapter meeting was held on February 4th, 2003, at the State University of Campinas, UNICAMP, in Campinas, SP. Two seminars were given by Prof. Siegfried Selberherr, from the Technical University of Vienna, Austria, as distinguished lecturer from EDS. The seminars were entitled: "Modeling High Speed Semiconductor Devices of Modern Communication Systems" and "Past and Future of Microelectronics Technology". Each lecture took about 50 minutes and they were followed by discussions. A total of 50 people attended the seminars. Most were staff and students from the Faculty of Electrical and Computer Engineering of UNICAMP; a group of 8 students came from the University of São Paulo; 2 were IC designers at a company, Motorola, and 2 faculty members from other universities, UFRJ and UNESP, also attended the seminars. After the seminars, Prof. Selberherr visited the Center for Semiconductor Components, where he also had discussions with students working on device simulation, using the MINIMOS program. A social event was organized for the evening. A dinner took place at a local steak house ("churrascaria"), where additional discussion and exchange of ideas happened. The day after the seminar, Prof. Selberherr, continued his trip, includ-



From left to right: Jacobus W. Swart and Siegfried Selberherr

ing a visit of The Falls of Iguazú, located in the region of the chapter, and which constitutes a symbol of the chapter and illustration of the first page of it's home page: <http://www.ccs.unicamp.br/ieeed>. For additional information, contact Professor Jacobus W. Swart at jacobus@led.unicamp.br.

— Adelmo Ortiz-Conde, Editor

Europe, Middle East & Africa (Region 8)

MTT/ED/AP/CPMT Saratov-Penza

- by Michael V. Davidovich

A lot of our scientific activities are presented in this report.

First of all, the 4th International Vacuum Electron Sources Conference 2002 (IVESC 2002) was organized by the Saratov Department of the Institute of Radio Engineering and Electronics of the Russian Academy of Sciences and was held in Saratov, Russia July 15-19, 2002. The conference was registered as an IEEE conference and supported by the Russian Fund for Basic Research, the Russian Ministry of Science and Technology, the Government of the Saratov region as well as Saratov State University and other research institutes and electronic companies of Russia, Europe, Asia and the USA. Further information on IVESC 2002 can also be found on the web at <http://www.ivesc.sgu.ru>.

The 2002 IVESC, which was held for the first time in Saratov in the former Soviet Union, was very successful and kept the tradition of high standards established by previous conferences. The total number of participants was 176, including participants from France, UK, Germany, Switzerland, Ukraine as well as from other Russian regions. We are appreciative to all the participants from the USA, China, Japan, Korea and India who contributed to the high standard of the conference and scientific exchange between world regions.

Technical sessions with 15 invited and 133 contributed papers, including 44 oral and 89 poster presentations, were included in the conference program. The general topics of the 4th IVESC were electron emission phenomena, technologies for vacuum electron sources and applications of vacuum electron sources.

A number of important scientific prob-



The discussion at the conference banquet, IVESC'02, Saratov, Russia

lems were considered in contributed reports. They were: thermionic emission, field emission (FE) including FE of carbon based materials such as carbon nanotubes, Nan graphite, diamond, other emission mechanisms and microwave tube applications. We must especially make note of the invited lecture of Prof. Yuri V. Gulyaev, who is the Director of the Institute of Radio Engineering and Electronics of the Russian Academy of Sciences (IRE RAS) and one of pioneers in the field of carbon nanotubes FE.

We are very thankful to all participants of the IVESC conference for their interesting reports. We also appreciate the continuous support from Prof. Dimitry F. Ayatskov, the Governor of the Saratov Region, and the other members of the national and Local Organizing Committees. It should be especially noted that this conference could never have happened without the numerous sponsors who have enabled a smooth organization, including attracting keynote speakers. Finally we want to thank all the contributors and referees and also IRE RAS for their efforts in realizing these Proceedings.

The next IVESC conference is in 2004 and will be held in Beijing, P.R. China and will be organized by Prof. F. Liao from BVERI. More information can be found on the web at <http://www.cie-china.org/ivesc2004>.

MTT/ED/AP/CPMT/SSC West Ukraine

- by Mykhailo I. Andriyчук

The VIIIth International Conference on the Experience of Designing and Application of CAD Systems in Microelectronics (CADSM-2003) was co-organized by the Ministry of Education and Science of the Ukraine, by the National University 'Lviv Polytechnic' and by the West Ukraine Chapter under the technical co-sponsor-



Mr. Tomash Zacharz receives the Best Young Speaker Award from Prof. Mykhaylo Lobur, Conference Chairman

ship of the IEEE EDS. This Conference was successfully held February 18-21, 2003 in Lviv-Slavsko, Ukraine. The CADSM is the most representative conference in the field of the optimization problems of the IC technological processes, development of models and methods of microelectronic devices designing, and field problem solution among all conferences organized in the Ukraine and the former Soviet Union countries.

Four lectures in the area of microelectronics and integrated circuits design were presented at the Plenary Session. In addition, very interesting information about the Project REASON (Research and Training Action for System On Chip Design), founded by the European Union, was presented.

Many young scientists and engineers, students, and PhD students participated at the Conference. They were given the opportunity to present the results of their own scientific investigations, as well as to receive some experience and new knowledge from their experienced colleagues. The Best Student Paper Awards were presented to young participants.

We are thankful to all participants of CADSM for the high professional level and amicable atmosphere. We will welcome you in the CADSM-2005 conference in



2004 International Conference on Microelectronics

Slavsko. For more information, please contact the CADSM-2003 Conference Chair, Head of CAD Department, Prof. Mykhaylo Lobur, cadsm@polynet.lviv.ua, and the Conference Web Site: <http://www.polynet.lviv.ua/CADSM>

2004 International Conference on Microelectronics (MIEL 2004)

- by Ivica Manic

The 24th International Conference on Microelectronics (MIEL 2004) will be held May 15-18, 2004, at the Faculty of Electronic Engineering, University of Nis, Serbia & Montenegro. The MIEL 2004 Conference will be organized by the IEEE Yugoslavia Section - ED/SSC Chapter, in cooperation with the Faculty of Electronic Engineering, University of Nis, Ei-Holding Co.-Nis, and Society for ETRAN, under the co-sponsorship of the IEEE EDS, with the cooperation of IEEE SSCS, and under the auspices of Serbian Ministry of Science, Technology and Development, Yugoslav Academy of Engineering, and City Assembly of Nis.

MIEL is an outstanding European conference providing an international forum for the presentation and discussion of the recent developments and future trends in the field of microelectronics. Since 1984, there is an aura of internationalization around the MIEL conferences, providing an opportunity for specialists from both academic and industrial environments from the West and East, as well as from the countries of the Third World, to meet in an informal and friendly atmosphere and exchange their theoretical and practical experiences. Since 1995, MIEL has been organized under the technical co-sponsorship of IEEE EDS, while the conference received IEEE EDS co-sponsorship for the first time in 2000.

The topics to be covered by the technical program of the MIEL 2004 Conference include all important aspects of microelectronic devices, circuits and systems, ranging from materials and processes, technologies and devices, device physics and modeling, process and device simulation, circuit design and testing, system design and packaging, and characterization and reliability. Based on the past decade history, the technical program is expected to consist of about 150 contributed papers by the authors from more than 30 countries all around the world, which will be structured into oral and poster sessions. These papers, together with 12 invited papers, which

are to be presented by the world leading authorities, will form the solid foundation of the conference. Two related scientific events, namely the workshops "Power Devices and ICs" and "Micro system Technologies", contain 5 invited papers each, will round off the technical program.

The invited lectures are: "GaN Electronics: Promises and Prospects" (I. Adesida), "Add-On Process Modules – an Economic Enhancement of Silicon Technology" (J. Burghartz), "Concept of Virtual MST-Factory" (H. Detter), "Characterization and Modeling Issues in MOS Structures with Ultra Thin Oxides" (G. Ghibaudo), "Memory Technology Including Emerging New Memory" (K. Kim), "MICROS: An Experimental Coin-Sized, Low Cost, Low Power CMOS ZigBee Radio at 2.4 GHz as a Ubiquitous Network Node" (K. Lee), "CMOS Analog Design for Wireless Communication" (V. Liberali), "CMOS Reliability: Empirical Modeling and SPICE Simulation" (J. Liou), "Analysis of High Speed Heterostructures Devices" (S. Selberherr), "Power Management in Wireless OEM Devices" (K. Shenai), "Predictive Simulation of Micro devices and Microsystems: The Basis of Virtual Fabrication, Experimentation and Test" (G. Wachutka), and "Microwave Photonics Links in Modern Communication Network: Component Technology" (P. Yu).

For registration and other information, visit the MIEL 2004 Home Page at <http://europa.elfak.ni.ac.yu/miel/>, or contact the MIEL Conference Secretariat, Department of Microelectronics, Faculty of Electronic Engineering, University of Nis, Beogradska 14, 18000 Nis, Serbia & Montenegro; Tel.: +381 18 529 325; Fax: +381 18 46 180; E-mail: miel@elfak.ni.ac.yu

— Alexander Gridchin, Editor

ED Sweden

- by Mikael Ostling

The ED Sweden Chapter has been very active during the first part of 2003. We organized two half-day symposia that had great attendances.

The first symposium was on the topic "CMOS silicon device technology for future generations high frequency systems". As a specially invited lecturer, EDS Vice President, Prof Hiroshi Iwai, held an overview talk on "CMOS downscaling beyond 10 nm". Thereafter, a highly appreciated poster session was held with many PhD students from both Chalmers University in Gothenburg, Uppsala Uni-

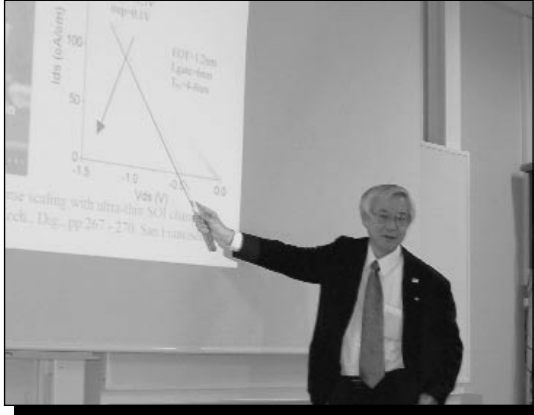


Figure 1 shows Prof Hiroshi Iwai during his talk at the ED Sweden Chapter Symposium on CMOS high frequency technology

versity and KTH where the symposium was held. More than 60 people attended the symposium.

The second symposium we organized was called "high speed digital seminar" and was done together with Agilent technologies. Excellent presentations were given on subjects such as "Achieving Higher Bandwidth Connectivity with High-speed Active Probes" and "Jitter Measurements in Digital Circuits". Active demonstrations were also complementing the talks. More than 30 people attended the symposium.

— Andrzej Napieralski, Editor

ED Israel

- by Professor Nathan Croitoru

On Thursday, February 27, 2003, at the Holon Inst. of Technology

(HAIT) – Holon: Subject of meeting: "Feasibility Tests of SiC Thin Films by DC Sputtering". Dr. Alex Axelevitch - Department of Electrical and Electronics Engineering, Holon Academic Institute of Technology.

The speaker's abstract was as follows: Silicon carbide is one of the materials that gained in importance from the last time. SiC single crystalline substrates are used to produce high-temperature and fast-acting electron devices. The hydrogenated amorphous silicon-carbide alloy thin films have been of technical interest as an optoelectronic material. These films have important applications also as p-type layers in amorphous silicon photovoltaic devices. Usual methods applied for silicon carbide films deposition are plasma enhanced CVD under plasma decomposition of organic compounds such as CH₄, C₂H₂, and C₃H₈.

In this work, the SixCy thin films were

deposited on silicon and glass substrates using magnetron DC sputtering the ceramic SiC target in argon plasma. Sputtering was provided as a continuous process and as a consequent sputtering of two targets: ceramic SiC and single crystalline Si. Optical, and dialectical properties of obtained films were investigated. Deposited films were transparent and behaved as dielectric in the Al-SixCy-Al and Al-SixCy-Si structures.

The Chairmen of the meeting were: Prof. Nathan Croitoru and Dr. Gady Golan - 30 people consisting of students and academic staff, attended the meeting in Holon.

On Thursday, March 13, 2003, at the Holon Inst. of Technology (HAIT) - Holon. Subject of meeting: "Pedagogical Aspects in the Teaching of Electrical Engineering". Prof. Arie Shenkman - Head of the Department of Electrical and Electronics Engineering, Holon Academic Institute of Technology.

The speaker's abstract was as follows: During my more than 30 years of teaching different subjects of the electrical engineering curriculum, especially Circuit Analysis, I have discovered that some relatively "simple" topics of this curriculum are difficult for the students to understand correctly. In this seminar I would like to present some of these topics for discussion: Power and its distribution; Mathematical or ideal elements; Voltage and emf; Current and its direction flow; Faraday's Law and Lentz's Principle; Current through a capacitor; Coupled elements and dot terminals.

The Chairmen of the meeting were: Prof. Nathan Croitoru and Dr. Gady Golan - 35 people, students and academic staff, attended the meeting in Holon.

MTT/ED/AP/LEO UK&RI

- by Terry Oxley

Originating in 1993 under the joint sponsorship of King's College London and the IEEE UKRI MTT/ED/AP/LEO Chapter, the annual IEEE International Symposium on Electron Devices for Microwave and Optoelectronic applications (EDMO) represents a most successful event established by the IEEE local Chapter. EDMO'2002 was held 18-19 November 2002 and hosted for the second time by the University of Manchester Institute of Technology (UMIST) Manchester UK. Other previous venues have included the Technical Uni-

versity of Vienna Austria, King's College London, the University of Leeds, and the University of Glasgow Scotland. The 2002 event, organized by UMIST with the IEEE UK&RI MTT/ED/AP/LEO Chapter, was held with technical co-sponsorship from IEEE EDS and in co-operation with IEEE MTT-S, IEEE LEOS, Institution of Electrical Engineers (IEE, UK) and Institute of Physics (IOP, UK). The meeting was hosted by Professor Mo Missous (Chairman) and Professor A A Rezazadeh (Co-Chairman).

Papers were presented from eighteen different countries and were arranged in eight oral and two poster sessions (6 invited talks, 25 oral presentations and 26 poster papers) covering all aspects of modern Si, SiGe, GaAs, InP, GaN, SiC devices and providing the emphasis on material growth and characterisations, wide-band gap devices and circuits, device and circuit modelling and technology including microwave and photonic applications, ranging from modelling over circuit simulation and design to system aspects.

Six Prestigious Invited Speakers gave presentations on: "InP HEMTs and HBTs Technology and Applications" by D. Streit (Velocium, USA); "Molecular Beam Epitaxy: Development of a Production-worthy Technique" by D. Williams (Thermo-VG Semicon, UK); "Low-cost manufacture of devices structures" by M J Kelly (Cambridge University, UK); "Devices for Microwave Applications" by Mike J Uren (QuinetiQ Ltd, Malvern Technology Centre, UK); "Solid-state RF Power Amplifiers-Status and Perspective" by Sylvain L Delage (Thales Research and Technology, France); and "Optimization of On-Chip Electrostatic Discharge (ESD) Structure for RF Operations" by J.J. Liu (University of Central Florida, USA).

It is the tradition of the IEEE UK&RI MTT/ED/AP/LEO Joint Chapter to award two best paper awards - one from the oral and one from the poster sessions. At EDMO 2002, the awards were presented to: Colin J Mitchell - best oral paper – for his presentation "Material characterization of a highly strained & partially strain compensated In_xGa_{1-x}As/In_yAl_{1-y}As quantum cascade light emitting diodes grown by MBE for emission in the near infrared (2-4μm)" authored by Colin J Mitchell¹, J L Sly¹, M Missous¹, S Banerjee², K A Shore² (1UMIST, 2University of Wales); and – best poster paper - Kerstin Schneider "Folded-cascode transimpedance amplifier for burst-mode applications" authored by Kerstin



From left to right: Professor Mo Missous - EDMO Chairman, Colin Mitchell (winner of the best oral paper), Kerstein Schneider (winner of the best poster paper), and Ali Rezazadeh - EDMO co-chairman.

oxide reliability near the scaling limit; J.Alonso (Isofoton), State of the Art in Silicon solar cells; J.Barbolla (UV), Atomistic simulation of technological processes; G.Clerici (Keithley), Improving Low Level Measurements on Nanoelectronics and Semiconductor Devices: Issues and Methods; J.M Villegas (UB), Passive integrated Devices for RF applications. Nearly 200 researchers, including the invited lecturers, participated in the Conference. The next occurrence of CDE will take place in 2005 in Taragona.

Schneider & Horst Zimmermann (Institute for Electrical Measurements & Circuit Design, TU Vienna).

Full details of the EDMO 2002 Symposium Proceedings (322 pages) can be electronically viewed through the IEEE. Catalog Number: 02TH8629. ISBN: 0-7803-7530-0.

For the first time an EDMO meeting is planned for the USA. In 2003, the EDMO Symposium, will be in its eleventh year, and will take place, 17-18 November at the Central University of Florida, USA. For more information, see EDMO on the web at www.edmo-symposium.org and for the local organizer (<http://www.ucf.edu>).

For further information on Chapter news, please contact the Chapter Chairman: Ali A Rezazadeh, Professor of Microwave Engineering, Dept. of Electrical Engineering and Electronics, University of Manchester Institute of Science and Technology (UMIST), P.O. Box 88, Manchester M60 1QD, UK. Tel: +44 (0) 161 200 4708 (Sec.4801). E-Mail: a.rezazadeh@umist.ac.uk.

— Gady Golan, Editor

ED Spain

- by Ramon Alcubilla

The CDE03 (Electron Devices Conference) was held in Calella (Barcelona) from 12 to 14 February 2003. It was the fourth edition of this conference with an important participation of researchers from universities, industries and research centers. The Conference was organized through invited lectures and poster sessions. Among the invited talks were: Charles Hunt (UCLA-Davis), Novel materials and nanostructures for application to Field-Emission Devices; J.Suñe (UAB), Gate

The Workshop on Compact Modeling for RF/Microwave Applications (CMRF03)

- by Slobodan Mijalkovic and Joachim Burghartz

The workshop on Compact Modeling for RF/Microwave Applications (CMRF03), sponsored by the Delft Institute of Microelectronics and Submicron technology (DIMES) and technically co-sponsored by the IEEE Electron Device Society, is taking place at Centre de Congrès Pierre Baudis, Toulouse, France on October 1, 2003. It is organized for the first time as a joint event to the European premiere of Bipolar/BiCMOS Circuit and Technology Meeting (BCTM 2003) that will be held at the same place 28-30 September 2003 with tech co-sponsorship from the IEEE Electron Device Society.

The CMRF03 workshop focuses on the critical compact modeling issues in RF/Microwave applications. It is a natural response to increasing demands of the RF/Microwave and communication technology designers for accurate and reliable compact modeling procedures at ultra-high frequencies. The most important topics covered by the CMRF workshop program are:

- Advanced bipolar transistor modeling for high frequency applications
- Compact modeling of modern heterojunction bipolar transistors
- Electro-thermal modeling with self-heating and thermal coupling effects
- Compact modeling of substrate coupling and interconnections
- Noise modeling
- Parameter extraction techniques
- Practical compact modeling issues in RF/microwave design

The workshop will consist of invited keynote lectures given by the world leading experts in the field and related discussion sections. The tentative list of the keynote speakers include: Henk de Graaff (Delft University of Technology, The Netherlands), Juin J. Liou (University of Central Florida, USA), Guofu Niu (Auburn University, USA), Jeroen Paasschens (Philips Research, The Netherlands), Niccolo Rinaldi (University of Naples, Italy) and Michael Schroter (University of Technology Dresden, Germany).

This workshop will provide the unique opportunity for RF/Microwave compact model developers in industry and academia to clearly identify areas that need further research. The workshop will also help circuit designers to address a wide diversity of RF/Microwave compact modeling issues and find a way to utilize it into the design of new products.

For up-to-date information on the CMRF03 workshop, please visit the website: <http://ectm.et.tudelft.nl/cmrf03>.

— Christian Zardini, Editor

Asia & Pacific (Region 10)

ED/LEO Australia

- by C. Jagadish

Professor Amin Dharamsi from the Old Dominion University, Norfolk, VA (LEOS Distinguished Lecturer) visited the Chapter and gave a seminar on "Advanced optical sensing using laser modulation spectroscopy" on January 7, 2003.

Professor Peter Zory, University of Florida, (formerly LEOS Distinguished Lecturer) visited the Chapter and presented a Short Course on "Semiconductor Lasers: Phenomenological model" during 22 January to 2 February 2003. Professor Zory also gave seminars on "Pulsed Electrochemical Techniques for Processing and Evaluating Semiconductor Laser Wafers" and "Designing Interband and Intersubband Semiconductor Lasers" on February 3rd and 4th, respectively.

Dr. Ashok Krishnamorthy, AraLight, NJ (LEOS Distinguished Lecturer) visited the Chapter and gave a seminar on "The Intimate Integration of VCSELs with VLSI Circuits" on March 10, 2003. Professor Daniel Mittleman of Rice University, Houston, TX (LEOS Distinguished Lecturer) visited the Chapter and gave a seminar on "Imaging with Terahertz Waves" on March 11, 2003.

For more information, please contact Prof. Chennupati Jagadish, Department of

Electronic Materials Engineering, Research School of Physical Sciences and Engineering, Australian National University, Canberra, ACT 0200, AUSTRALIA, Ph: 61-2-6125-0363, FAX: 61-2-6125-0511, Email: c.jagadish@ieee.org.

AP/ED Bombay

- by Prof. M.B. Patil

During January–March 2003, the IEEE AP/ED Bombay Chapter organized the following events. On January 2, Prof. K.C. Saraswat, Stanford University, gave a talk on "Performance limitations of devices and interconnects and possible alternatives for nanoelectronics."

Dr. Pushkar Apte, McKinsey, USA, talked on "The evolving structure of the semiconductor industry" on January 9. The audience was given an excellent perspective of the global scenario regarding fabrication facilities and current trends in the industry.

On Jan 10, Dr. Natarajan Iyer, IMEC, Belgium, presented a seminar on "ESD: from black magic to CAD assisted methodology". Dr. Iyer gave a good idea of the problem of ESD and the current research in this area.

Dr. Vishwani D. Agarwal, Rutgers University, USA, gave a seminar on January 24 on "Minimum dynamic power CMOS circuits" in which he explained the significance of dynamic power and a linear programming technique for its minimization.

The AP/ED Bombay Chapter co-sponsored a two-day seminar on "Circuit simulation" Jan 31–Feb 1. The seminar was attended by students and college teachers from various colleges in Mumbai. The seminar covered an introduction to circuit simulation, circuit simulation tools, and advanced topics such as partitioning of networks.

Prof. Tadashi Takano, University of Tokyo, talked on "Gigantic antenna with 1 km diameter for microwave power transmission from a solar power satellite" on March 14. On March 15, 2003, the IEEE AP/ED Bombay Chapter organized a one day workshop on Microelectronics and VLSI at the Finolex Academy, Ratnagiri, which is about 450 Km from Bombay. Over 130 students and faculty from various engineering colleges in the Konkan region attended the workshop. Profs. A.N. Chandorkar, D.K. Sharma and V. Ramgopal Rao from the Microelectronics group, Department of Electrical Engineering, IIT Bombay delivered lectures at this workshop covering various aspects of microelectronics, including

ULSI chip design, device physics, circuit design and Nanotechnology. The talks were extremely well received and the participants were exposed to the current research trends in all these areas.

Prof. Vikram Dalal, Iowa State University, gave a seminar on "Nanocrystalline Si: H, new material for electronic and optical devices," on March 20. He described material growth, transport properties, and device applications of nanocrystalline Si: H.

The IEEE AP/ED Bombay Chapter took the initiative to invite Prof. C.R. Viswanathan, an IEEE Life Fellow, who was visiting the country, to the IIT Bombay campus as part of its efforts to provide a forum for research groups working in common areas to interact with each other. Prof. Viswanathan visited IIT Bombay on March 13, 2003 and spent a day discussing various research activities that are currently underway in the Microelectronics group at IIT Bombay. Prof. Viswanathan, who is a senior professor at the University of California, Los Angeles, discussed various possibilities for research collaboration between the Microelectronics group at IIT Bombay and UCLA.

For more information, please contact Prof. MB Patil, Electrical Engineering Department, IIT Bombay, Powai, Mumbai 400076, India, Email: mbpatil@ee.iitb.ac.in.

ED/MTT India

- by Dr. K.S. Chari

The Chapter had pursued EDS STAR efforts at two locations. The Harita Ecological Institute (Paloncha) activities has prompted the Baltimore region to extend to Harita a grant of US \$5000/- to further experiment with the power generation from the muscle power of the cattle. The second STAR effort was focused on the Nalanda Group of Educational institutions and allied groups.

The Chapter, in association with Electronics Science Department of Kurukshetra University, organized a two day National Level Symposium on Electronics Technology (NASET 2003) 2 to 3 March 2003, with technical paper presentations, hardware contest cum exhibition, the science and technology quiz, technical poster competition, presentation by professionals. Dr. S. Ahmed, Director (CEERI, Pilani) delivered a keynote address entitled "Nanotechnology for Cosmetics". The Chapter Chair gave a lecture on the developments that shaped electronics,

role of innovation processes and practical applications in the race of the modern world. Professor Hari Singh, Dean of Science, inspired the students to take up the challenging tasks of probing knowledge and developments in the country. The event attracted over 250 students and 25 teams from north India participated with 60 papers for paper presentation, 26 entries for the technical poster competition, and 10 teams in the hardware contest and 25 for the quiz.

The Chapter co-sponsored a national conference on "Microchip Design and Technology" during 6 to 8 March 2003. The local Maharaja Surajmal Institute of Technology at Delhi organized the event. Besides keynote addresses by experts in the field, several faculty and research workers presented several technical sessions and over 20 papers in the field. The papers covered the aspects of simulation of devices, alternate gate dielectrics, radiation effects, meteorological challenges, and ASIC implementations, embedded solutions, Fuzzy chips, ESD protection and IC Design. Over 150 participants attended the event.

For more information, please contact Dr. K.S. Chari, Director, Microelectronics & Photonics Division, Department of Electronics, C.G.O. Complex, New Delhi, India, TEL: 91-11-4361464; FAX: 91-11-4363082; Email: chari@mit.gov.in.

ED/SSC Bangalore

- by Prof. Navakanta Bhat

The first event for the year 2003 was a technical talk by Dr. Ashok K. Sinha, Senior Executive Vice President, Applied Materials Inc. USA. This was held on 10 January 2003. The topic of his talk was "Recent Technological Innovations to Enable Moore's law for sub-100nm Semiconductor Devices". He gave the perspectives from the equipment manufacturers.

Prof. Vishwani Agrawal, Rutgers University, gave a technical talk on "CMOS Testing with Graphical Quiescent Current Signatures". This was held on 17 January and was co-sponsored by Texas Instruments India. Dr. M.K. Radhakrishnan, Philips Semiconductors, Singapore delivered the IEEE Distinguished Lecture on 3 February 2003. The topic was "DBIE-A New Degradation Mechanism Associated with Ultra thin Gate Oxide Breakdown in MOSFETs".

For more information, please contact Prof. Dr. Navakanta Bhat, email: navakant@ece.iisc.ernet.in.

— Wee Kiong Choi, Editor

ED Japan

- by Naoki Yokoyama

On January 20th, the first Japan Chapter Student Award was given to Daisuke Kobayashi, Takeru Amano, Takuji Hosoi, Masumi Saitoh, and Hiroshi Nakatsuji. This award was established in 2002 to encourage student members who actively contribute to the research of electron devices. The Japan Chapter selected these five students who have shown outstanding activities in the last year. They received metallic certificate plaques and premium from the Chapter Chair at the Japan Chapter annual meeting held in Tokyo.

After the annual meeting, the briefing session for the 2002 IEDM was held to provide a summary discussion on the highlights of the 2002 IEDM. The five invited speakers delivered topics covering Integrated Circuits, CMOS Devices, CMOS Interconnects/Process, Modeling/Simulation, and Compound/Quantum Devices. This session has won popularity with a lot of the Japanese engineers who did not have a chance to attend the last IEDM to discuss the most advance information of electron device technology. The session was very successful with 120 participants.

ED Kansai

- by Hiroyuki Sakai

The 3rd Kansai Colloquium Electron Devices Workshop was successfully held at the Campus Plaza Kyoto, Kyoto, Japan, February 25, 2003. The Workshop was sponsored by the ED Kansai Chapter and co-sponsored by Kyoto University and Osaka University which offered a good opportunity for students and researchers in the Kansai area to touch the latest world-class research developments. Ten papers were selected

for the presentation, with five of them concerning Si based technologies and the others being compound semiconductor related. This workshop was considered as a contest for the 3rd MFSK (Message From Spirited Kansai) Award. The winner was Dr. Ota of Mitsubishi Electric; the title of the paper was "Novel Locally Strained Channel Technique for High Performance 55nm CMOS". Mr. Nakatsuji of Osaka University was also selected for the student award for his paper "A Study of Subband Structure and Transport of Two-Dimensional Holes in Strained Si p-MOSFETs Using Full-Band Modeling". The winners will be honored at the next Kansai Colloquium Electron Devices Workshop with a memorial wall plaque engraving their names. The 2003 first general assembly meeting of the EDS Kansai Chapter followed the workshop. The new executive officers for 2003-2004, including the new Chapter Chair, Dr. Daisuke Ueda, were introduced to the members. The coming international conference entitled "2003 International Meeting for Future Electron Devices, Kansai (2003IMFEDK)," was announced and called for an active paper submission. The first executive officers' meeting was also held on the same day. The chairperson of each committee was selected first; an accounting report was next and activity plans followed. The key topic was administration of the 2003 IMFEDK. The conference will be held at the Osaka University Convention Center July 16-18. Making posters and having a web site were decided to advertise the event. The URL of the web site is <http://www.imfedk.org>.

— Hisayo S. Momose, Editor

ED/SSC Hong Kong

- by Hei Wong

The ED/SSC Hong Kong Chapter has held and sponsored a series of technical activities since the last report. On October 29, 2002, the Chapter was visited by EDS DL Professor C. K. Sarkar of Jadavpur University, India. He also presented a very interesting seminar on "Impact ionization induced gate oxide degradation mechanisms in

metal-oxide-semiconductor devices" in the City University of Hong Kong. The Chapter sponsored conference: IEEE International Conference on Field-Programmable Technology was held in the Chinese University of Hong Kong during December 16 to 19, 2002. Over 80 papers were presented in oral and poster in the ten technical sessions. Furthermore, five keynote speakers highlighted the state-of-the-art in the topics relevant to the field-programmable technology.

During January 6 to 8, 2003, a workshop on "Selective, patterned and self-assembled Growth of Nano-structures" was organized by professors K. M. Lau (EDS DL), T. F. Kuech (University of Wisconsin at Madison) and S. S. Lau (University of California at San Diego) in the Hong Kong University of Science and Technology. The technical program highlighted leading advances in the formation of nano-structures by chemical, growth or self-assembled means. The workshop consists of leading researchers from the China, US, Europe, Taiwan, Hong Kong and other parts of the world. Invited speakers include: L.J.Chen, (National Tsinghua University, Taiwan), S. DenBaars (University of California, Santa Barbara), D. Dapkus (University of Southern California), M. Heuken (Aixtron AG), T. Kuech (University of Wisconsin, Madison), H.S. Kwok (Hong Kong University of Science and Technology), S.T.Lee (City University of Hong Kong), J.Redwing (Pennsylvania State University), J. Tsao (Sandia National Laboratory), N. Wang (Hong Kong University of Science and Technology).

A short course on "Semiconductor Optoelectronics" was organized by Professor C. Surya in Hong Kong Polytechnic University during January 16 to 20, 2003 Professor M. Pilkuhn of Stuttgart University, Germany, and Professor H. -L. Hwang of National Tsinghua University, Taiwan, are the invited distinguished lecturers for the 4-day short course. Professor Pilkuhn presented detailed discussion on many important issues of the physics and the application of advance semiconductor lasers. Professor Hwang's lectures concentrated on the physics and potential application of Si optoelectronic devices based on amorphous Si and nano structure Si devices.

— Hei Wong, Editor



The Briefing Session for the 2002 IEDM

EDS Meetings Calendar

(As of 9 May 2003)

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

July 1 - 4, 2003, T **Siberian Russian Workshop and Tutorial on Electron Devices and Materials** Location: NSB Convention Center, Novosibirsk, Russia Contact: Vladimir Kolchuzhin, Karl Marx prospect 20, Novosibirsk, Russia 630092 Tel: +7 3832 460877 Fax: +7 3832 460209 E-Mail: kolchuzhin@ref.nstu.ru Deadline: 3/15/03 www: <http://ieeen.nsk.su/edm>

July 3 - 5, 2003, T **IEEE Conference on Electron Devices and Solid State Circuits** Location: New World Renaissance Hotel, Hong Kong, China Contact: Hei Wong, City University, 83 Tat Chee Avenue, Kowloon, Hong Kong Tel: +852 2788 7722 Fax: +852 2788 7791 E-Mail: eehwong@cityu.edu.hk Deadline: 2/28/03 www: http://www.ee.ust.hk/ieeed_eds/edssc.htm

July 7 - 11, 2003, T **IEEE International Symposium on the Physical and Failure Analysis of Integrated Circuits** Location: Shangri-la Hotel, Singapore, Singapore Contact: Jasmine Leong, Kent Ridge Post Office, PO Box 1129, Singapore 911105 Tel: +65 743 2523 Fax: +65 746 1095 E-Mail: ipfa@pacific.net.sg Deadline: 1/15/03 www: <http://www.ieee.org/ipfa>

July 7 - 11, 2003, @ **International Vacuum Microelectronics Conference** Location: Senri Life Science Center, Toyonaka, Osaka, Japan Contact: Mikio Takai, Osaka University, Machikaneyama 1-3, Toyonaka, Osaka, Japan 506-8531 Tel: +81 6 6850 6693 Fax: +81 6 6850 6662 E-Mail: takai@rcem.osaka-u.ac.jp Deadline: 3/15/03 www: <http://ivmc2003.rcem.osaka-u.ac.jp>

July 16 - 18, 2003, T **IEEE International Meeting for Future of Electron Devices, Kansai** Location: Convention Center, Osaka University, Suita Campus, Osaka, Japan Contact: Hiroshi Nozawa, Kyoto University, Graduate School of Energy Science, 208, # 2 Building, Kyoto, Japan 606-8501 Tel: +81 75 753 4725 Fax: +81 75 753 4725 E-Mail: nozawa@vega.energy.kyoto-u.ac.jp Deadline: Not Available www: Not Available

August 12 - 14, 2003, T **IEEE Conference on Nanotechnology** Location: Moscone Convention Center, San Francisco, CA, USA Contact: Chennupati Jagadish, Australian National University, Department of Electronic Materials Engineering, Canberra, ACT 0200, Australia Tel: +61 2 6125 0363 Fax: +61 2 6125

0511 E-Mail: c.jagadish@ieee.org Deadline: 3/28/03 www: <http://ieeenano2003.arc.nasa.gov>

August 18 - 22, 2003, T **International Conference on Noise in Physical Systems and 1/F Fluctuations** Location: Czech Noise Research Laboratory, Prague, Czech Republic Contact: Josef Sikula, Czech Noise Research Lab, Brno University of Technology, Technicka 8, Czech Republic 616 00 BRNO Tel: +420 5 4114 3328 Fax: +420 5 4114 3398 E-Mail: sikula@fec.vutbr.cz Deadline: 12/15/02 www: <http://www.cnrl.cz/ICNF>

August 25 - 27, 2003, T **International Symposium on Low-Power Electronics and Design** Location: JW Marriott Hotel, Seoul, Korea Contact: Rajiv Joshi, IBM Research Division, Yorktown Heights, NY, USA 10598 Tel: Not Available Fax: Not Available E-Mail: rvjoshi@us.ibm.com Deadline: 2/14/03 www: <http://poppy.snu.ac.kr/~islpd/>

August 25 - 27, 2003, * **IEEE International Symposium on Compound Semiconductors** Location: University of California San Diego, La Jolla, CA, USA Contact: Conf Mgt Group LEOS, IEEE, 445 Hoes Lane, Piscataway, NJ, USA 08854 Tel: +1 732 562 3899 Fax: +1 732 562 8434 E-Mail: leosconferences@ieee.org Deadline: Not Available www: <http://www.i-leos.org>

September 3 - 5, 2003, @ **IEEE International Conference on Simulation of Semiconductor Processes and Devices** Location: Boston Marriott Cambridge, Cambridge, MA, USA Contact: Fely Barrera, Stanford University, CISX 332, Stanford, CA, USA 94305-4075 Tel: +1 650 723 1349 Fax: +1 650 725 7731 E-Mail: sispad03@gloworm.stanford.edu Deadline: 2/28/03 www: <http://www.tcad.stanford.edu/sispad03/cfp.html>

September 6 - 7, 2003, T **European Gallium Arsenide and Other Semiconductor Applications Symposium** Location: ICM Convention Centre, Munich, Germany Contact: Ing. Schiechtweg, Fraunhofer-Institute IAF, Tullaster 72 79108, Freiburg, Germany Tel: +49 761 5159 534 Fax: +49 761 5759 565 E-Mail: michael.schiechtweg@iaf.fraunhofer.de Deadline: 7/12/03 www: <http://www.eumw2003.com>

September 8 - 13, 2003, T **Symposium on Microelectronics Technology & Devices** Loca-

tion: TBD, Sao Paulo City, Brazil Contact: Jacobus Swart, State University of Campinas, PO Box 6061, R.Pandia Calogeras, 90 13 083-970 Campinas-SP, Brazil Tel: +55 19 3788 7282 Fax: +55 19 3788 4873 E-Mail: jacobus@led.unicamp.br Deadline: Not Available www: Not Available

September 8 - 12, 2003, T **International Crimean Microwave Conference "Microwave & Telecommunication Technology"** Location: Sevastopol State Technical University, Sevastopol, Ukraine Contact: Pavel Yermolov, P.O. Box 240, Sevastopol, Crimea, Ukraine 99057 Tel: +380 692 424 287 Fax: +38 0692 555768 E-Mail: weber@execs.com Deadline: 5/11/03 www: <http://ieeee.orbita.ru/aps/crim03e.htm>

September 28 - 30, 2003, @ **Bipolar/BiCMOS Circuits and Technology Meeting** Location: Centre De Congres Pierre Baudis, Toulouse, France Contact: Janice Jopke, CCS Associates, 6611 Countryside Drive, Eden Prairie, MN, USA 55346 Tel: +1 952 934 5082 Fax: +1 952 934 6741 E-Mail: ccs@mn.rr.com Deadline: 3/7/03 www: <http://www.ieeee-bctm.org>

September 16 - 18, 2003, T **European Solid-State Device Research Conference** Location: Estoril Congress Centre, Estoril, Portugal Contact: Ana Marcelino, Chipidea Microelectronics, Taguspark, Edificio Inovacao IV, sala 733, Porto Salvo, Portugal 2780-920 Tel: +351 21 033 63 00 Fax: +351 21 033 63 96 E-Mail: ana.marcelino@chipidea.com Deadline: 4/5/03 www: <http://www.chipidea.com/essderc2003>

September 16 - 19 2003, T **International Conference on Solid-State Devices and Materials** Location: The Keio Plaza Inter-Continental-Keio Plaza Hotel, Tokyo, Japan Contact: Noriko Sugimoto, Japan Tel: Not Available Fax: Not Available E-Mail: ssdm@intergroup.co.jp Deadline: 5/8/03 www: <http://www.intergroup.co.jp/ssdm/>

September 21 - 25, 2003, T **Electrical Overstress/Electrostatic Discharge Symposium** Location: The Riviera Hotel, Las Vegas, NV, USA Contact: Lisa Pimpinella, ESD Association, 7900 Turin Road Building 3, Suite 2, Rome, NY, USA 03440-2069 Tel: +1 315 339 6937 Fax: +1 315 339 6793 E-Mail: eoesed@aol.com Deadline: 1/13/03 www: <http://www.esda.org>

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 # = Cooperation Support

September 21 - 24, 2003, T **IEEE Custom Integrated Circuits Conference** Location: Doubletree Hotel, San Jose, CA, USA Contact: Melissa Widerkehr, Widerkehr & Associates, 16220 South Frederick Avenue, Suite 312, Gaithersburg, MD, USA 20877-4020 Tel: +1 301 527 0900 ext. 101 Fax: +1 301 527 0994 E-Mail: melisaw@widerkehr.com Deadline: 4/2/03 www: <http://www.his.com/~cicc>

September 23 - 25, 2003, T **International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory** Location: Institute of Applied Problems of Mechanics & Math, Lviv, Ukraine Contact: Nikolai Voitovich, Institute of Applied Problems of Mech & Math of NASU, Naukova St. 3"B", Lviv, Ukraine 79601 Tel: +380 322 651944 Fax: +380 322 637088 E-Mail: voi@aipmm.lviv.ua Deadline: 7/1/03 www: <http://www.ewh.ieee.org/soc/cpmt/ukraine>

September 24 - 26, 2003, T **International Conference on Advanced Thermal Processing of Semiconductors** Location: The Westin Francis Marion Hotel, Charleston, NC, USA Contact: Conference RTP, 4830 Langdale Way, Colorado Springs, CO, USA 80906 Tel: +1 719 579 8050 Fax: +1 719 579 8082 E-Mail: silicon@webrooter.net Deadline: 5/31/03 www: <http://www.rtp-conference.org>

September 28 - October 2, 2003, * **International Semiconductor Conference** Location: Sinaia Hotel, Sinaia, Prahova, Romania Contact: Dan Dascalu, IMT-Bucharest, PO Box 38-160, Bucharest, Romania 72225 Tel: +40 1 490 85 83 Fax: +40 1 490 82 38 E-Mail: dascalu@imt.ro Deadline: 4/16/03 www: <http://www.imt.ro/CAS/>

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September 29 - October 2, 2003, * **IEEE International SOI Conference** Location: Newport Beach Marriott Hotel & Tennis Club, Newport Beach, CA, USA Contact: Bobbi Armbruster, BACM, 520 Washington Blvd. Suite 350, Marina Del Rey, CA, USA 90292 Tel: +1 310 305 7885 Fax: +1 310 305 1038 E-Mail: bacm@attbi.com Deadline: 5/2/03 www: <http://www.soiconference.org>

September 30 - October 2, 2003, @ **International Symposium on Semiconductor Manufacturing** Location: Fairmont Hotel, San Jose, CA, USA Contact: Audrey Osborn, Martiz, 1777 Botelho Drive, Walnut Creek, CA, USA 94596 Tel: +1 925 2875388 Fax: +1 925 287 5398 E-Mail: audrey.osborn@martiz.com Deadline: 5/2/03 www: <http://www.issm.com>

October 1, 2003, T **Workshop on Compact Modeling for RF/Microwave Applications** Location: Centre de Congres Pierre Baudis, Toulouse, France Contact: Slobodan Mijalkovic, Delft University of Technology, DIMES, Delft, The Netherlands Tel: Not Available Fax: Not Available E-Mail: s.mijalkovic@its.tudelft.nl Deadline: Not Available www: <http://ectm.et.tudelft.nl/cmrf03>

October 6 - 10, 2003, T **European Symposium on Reliability of Electron Devices, Failure Physics and Analysis** Location: Palatium-Arcachon, Arcachon, France Contact: Nathalie Labat, Universite Bordeaux 1 - Laboratoire IXL, 351, cours de la Liberation, Talence, France 33405 Tel: +33 556 84 6551 Fax: +33 556 37 1545 E-Mail: labat@ixl.u-bordeaux.fr Deadline: 3/31/03 www: <http://www.esref.org>

October 12 - 15, 2003, T **IEEE Conference on Intelligent Transportation Systems** Location: Regal International East Asia Hotel, Shanghai, Chi-

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na Contact: Fei Wang, University of Arizona, PO Box 210020, Tucson, AZ, USA 85721 Tel: +1 520 621 6558 Fax: +1 520 621 6555 E-Mail: feiyue@sie.arizona.edu Deadline: 3/1/03 www: <http://www.ewh.ieee.org/tc/its/conf.html>

October 20 - 23, 2003, * **IEEE International Integrated Reliability Workshop** Location: Stanford Sierra Camp, South Lake Tahoe, CA, USA Contact: Roy and Becky Walker, 301 North Madison, Rome, NY, USA 13440 Tel: +1 315 339 3968 Fax: +1 315 336 9134 E-Mail: roy@sar101.com Deadline: 7/6/03 www: <http://www.irps.org/irw/>

November 9 - 12, 2003, * **IEEE Gallium Arsenide Integrated Circuits Symposium** Location: U.S. Grant Hotel, San Diego, CA, USA Contact: William Peatman, 141 Mt. Bethel Road, Warren, NJ, USA 07059 Tel: +1 908 668 5842 Fax: +1 908 412 5989 E-Mail: wpeatman@anadigics.com Deadline: 5/5/03 www: <http://www.gaasic.org>

December 3 - 6, 2003, * **IEEE Semiconductor Interface Specialists Conference** Location: Marriott Key Bridge, Arlington, VA, USA Contact: Bob Wallace, University of North Texas, Materials Science Department, P.O. Box 305310, Denton, TX, USA 76203-5310 Tel: +1 940 369 7834 Fax: +1 940 565 4824 E-Mail: rwallace@unt.edu Deadline: 7/14/03 www: <http://www.ieeesisc.com>

December 7 - 10, 2003, * **IEEE International Electron Devices Meeting** Location: Washington Hilton & Towers Hotel, Washington, DC, USA Contact: Phyllis Mahoney, Widerkehr & Associates, 16220 South Frederick Avenue, Suite 312, Gaithersburg, MD, USA 20877-4020 Tel: +1 301 527 0900 ext. 103 Fax: +1 301 527 0994 E-Mail: phyllism@widerkehr.com Deadline: Not Available www: <http://www.ieee.org/conference/iedm>

YOUR HELP IS NEEDED – Request for your assistance in obtaining past proceedings of the International Electron Devices Meeting (IEDM)

Attention All EDS Members:

As you may already be aware EDS is currently working on a project to scan and digitize all the past proceedings of the International Electron Devices Meeting (IEDM) that are not currently accessible via IEEE Xplore (pre 1988) issues. In order for this project to be completed all the proceedings must be located and

scanned. We will need to obtain all the IEDM proceedings from 1955-1987.

If you have any of these proceedings and would like to donate them for scanning it would be greatly appreciated. The proceedings will have to be cut to be able to scan them properly but if you would like they can be bound back together and returned to

you when the job is completed. If you have any of the past proceedings and are willing to lend them to the Society, please notify Stacey Waters at the EDS Executive Office at your earliest convenience and she will make the arrangements to obtain the issue(s). Stacey can be reached via e-mail at s.waters@ieee.org or via telephone at +1 732 981 3448.



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