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## Table of Contents

Upcoming Technical Meetings .....	1
• 1996 IVMC	
• 1996 ISPSD	
• 1996 PVSC	
• 1996 IECEC	
Summary of the December 1995 AdCom Meeting .....	2
Society News .....	7
• 1995 J.J. Ebers Award	
• 1995 EDS Distinguished Service Award	
• 1995 EDS Region 8 Chapters Meeting	
• 1995 EDS Region 10 Chapters Meeting	
Regional & Chapter News .....	10
• USA, Canada & Latin America	
• Europe, Middle East & Africa	
• Asia & Pacific	
EDS Meetings Calendar .....	17
Newsletter Editorial Staff .....	20

## Contributions Welcome

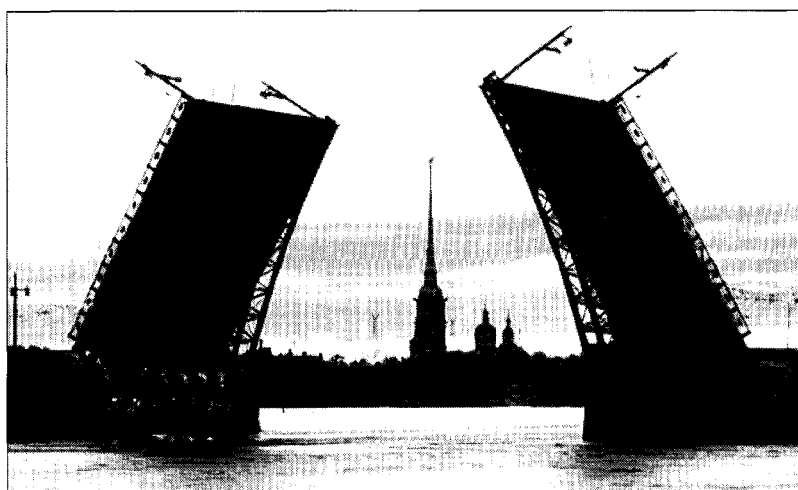
Readers are encouraged to submit news items concerning the Society and its members. Please send your ideas/articles directly to either the Editor-in-Chief or appropriate Editor. All contact information is listed on the back cover page. Whenever possible, e-mail is the preferred form of submission.

### Newsletter Deadlines

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

# IEEE Electron Devices Society Newsletter

## 1996 International Vacuum Microelectronics Conference (IVMC)



The 9th International Vacuum Microelectronics Conference (IVMC'96) will continue its truly international tradition by having the 1996 conference in the historic and beautiful city of St. Petersburg, Russia, two weeks after the celebration of the world renowned "white nights" where the sun shines virtually all night. The conference will be held in the modern State Education Center of St. Petersburg, which is a facility comprising up-to-date conference auditoriums including the capability for computerized audio/visual presentations, real-time translations, modern administrative and e-mail support, outstanding on-site lodging and dining facilities, and is within close walking distance to two metro stops of the city's excellent subway system where trains come about every 2-3 minutes. This particular site is a very safe and physically secure facility which has its own medical clinic, and we hope to be the only occupants during the conference period. The conference site is approximately 15 minutes by subway to the central sightseeing places, such as the Hermitage Museum, Russian Museum, Peter and Paul Fortress, Saint Isaac Cathedral, etc. There are more than 100 museums, parks, and palaces in St. Petersburg, as well as many well-known historical sites. We will have several sightseeing events, and we will provide transportation from/to the airport and railway stations for conference participants, their families, and accompanying persons. The complete social program, as well as the technical program, will be mailed to those who pre-register.

(continued on page 3)

## Your Comments Solicited

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

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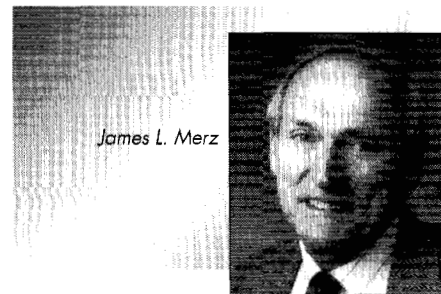
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## Summary of the December 1995 AdCom Meeting



James L. Merz

A meeting of the Electron Devices Society Administrative Committee (AdCom) took place at the Hilton Hotel in Washington DC preceding the International Electron Devices Meeting (IEDM), on December 10, 1995. The following are some of the highlights from the meeting.

### President's Report

The important items covered by Dexter Johnston included:

- The following AdCom Ex-Officio member appointments for 1996 were announced. John Lowell was named EDS Editor, and Brian Doyle and Mark Law were named Associate Editors, for *Circuits & Devices Magazine*. Al Mac Rae has taken over for April Brown as the EDS Representative of the IEEE/TAB New Technology Directions Committee. Peter Cottrell and Lou Parrillo received certificates for serving as elected members of AdCom during the period 1990-1995.
- Action was taken at the 12/9/95 Executive Committee meeting to form a "Transnational Committee" (TC), with Cary Yang as the Chair. The new Committee will replace the current Sections/Chapters Committee and Chairship. All IEEE geographic regions will be represented on the Committee. The current EDS Technical Activities Co-Chairs for Regions 8 (Europe, Mid. East & Africa) and 10 (Asia & Pacific) will be members of the TC.
- Future directions in our publication activities will emphasize electronic publishing, which has already been started with our *Journal of Technology Computer Aided Design* and will soon be considered for *Electron Device Letters*. Dexter described various options for utilizing the WEB for pre-publication availability, and for electronic publication. However, we will continue paper publishing for some time, so there will be additional cost while we do both electronic and conventional publishing in parallel. It is necessary to provide members with an archival option, which prevents the switch to electronic publishing alone.
- The IEEE is considering reorganization, and will soon vote on a number of new structures. Under consideration are issues such as the weight of regional vs. technical activities, the degree of centralization that would be optimal, the importance of regional activities, etc. In terms of financing, the IEEE will pass back to the societies the revenues that are generated by them, and will also pass back any subsidization to the societies. Because of the excellent fiscal management of EDS, we will benefit greatly

(continued on page 16)

### EDS ADCOM ELECTED MEMBERS-AT-LARGE

Term Expires:

1996	1997	*1998
B.F. Griffing	H.S. Bennett	S. Asai
T. Ikoma	J.T. Clemens	A.S. Brown
R.P. Jindal	H. Iwai	T.P. Chow
J.B. Kuo	J.L. Merz	M.A. Shibib
J.K. Lowell	K. Tada	R.D. Sivan
I. Mojzes	R.J. Temkin	J.M. Woodall
T.H. Ning	S. Verdonck-Vandebroek	C.Y. Yang
R.J. Van Overstraeten		

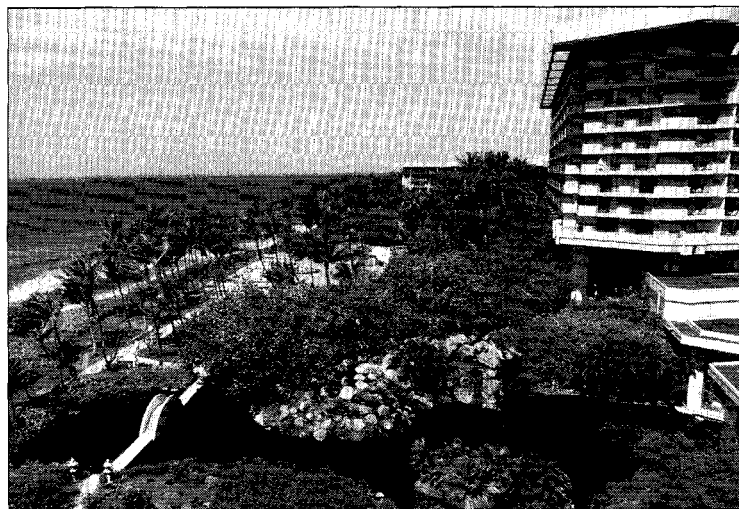
\* Members elected 12/95

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# Upcoming Technical Meetings

## 1996 IEEE International Symposium on Power Semiconductor Devices and ICs (ISPSD)



The eighth International Symposium on Power Semiconductor Devices and ICs (ISPSD), will be held in the Hyatt Regency Maui Hotel, Maui, Hawaii, on May 20-23, 1996. The Symposium addresses all aspects of power semiconductor devices, both discrete and integrated circuits, including: technology, processing, materials, circuits, applications, packaging and reliability.

The theme of ISPSD'96 is "power semiconductor technology roadmap." The topic will be discussed during a half-day session where all participants will be able to express their views, issues and prospects for power semiconductor technology during the next five years. At the Symposium, a draft of the power semiconductor technology roadmap will be presented as the consensus summary of the power semiconductor device community.

The Symposium will start with a plenary session covering three major areas of the Symposium. T. Abe, from Shin-Etsu, will present an overview of silicon-on-insulator material; Bruno Murari, from SGS-Thomson, will discuss power integrated circuits in motor control applications, and Sam Anderson, from Motorola, will address GaAs technology and its applications to rectifiers.

In addition to the oral sessions, the Symposium will have a poster session and a workshop, held in cooperation with Dave

Blackburn from NIST. Phil Hower, from Unitrode will chair the workshop which consists of three groups: high voltage power devices, chaired by Leo Lorenz, from Siemens; low voltage power devices, chaired by Dan Kinzer, from International rectifier; and high voltage and power integrated circuits, chaired by Ayman Shibib, from AT&T Bell Labs.

The international nature of this Symposium, which is held annually, is reflected in the rotation of the Symposium site between Europe, Japan and the United States. In 1994, ISPSD was held in Davos, Switzerland and in 1995 it was held in Yokohama, Japan. Also the regional distribution of the papers submitted reflects the truly international nature of the Symposium with: 26% from Europe, 36% from Japan and 38% from North America. The contribution of papers for ISPSD'96 is at 64% from industry and 26% from academia.

For further information please contact one of the Organizing Committee members: General Chairman, Richard Williams, Siliconix, TEL: (408)970-5408; Technical Program Chairman, Andy Salama, U. of Toronto, TEL: (416)978-8658; Publicity Chairman, Phil Hower, Unitrode, TEL: (603)424-2410; Treasurer, Ayman Shibib, AT&T Bell Labs, TEL: (610)939-6576.

— M. Ayman Shibib  
AT&T Bell Labs  
Reading, PA

## IVMC96

(continued from page 1)

Since the first IVMC, which was held in Williamsburg, Virginia, USA, in 1988, the interest in vacuum microelectronics has grown significantly throughout the world. For example, IVMCs have been held in England, Austria, France, Japan, and the US. Future conferences will take place in Korea, Taiwan, etc.

IVMC'96 will continue to combine both basic and applied science results with the development of application-specific devices. Indeed, just prior to IVMC'96, we expect the first commercial vacuum microelectronics products will be announced and shipped. These products will include a variety of field emitter displays (FEDs) made using several different manufacturing processes. For example, at IVMC'94, Pix-Tech demonstrated a full-color prototype FED based on deposited molybdenum field emitters which might be used for video phones; and at IVMC'95, Micron Display Technology demonstrated the first all-silicon full-color prototype FED eyepiece for a camcorder.

IVMC'96 is sponsored by the IEEE Electron Devices Society and is organized by the Russian Academy of Sciences, Academy of Natural Sciences of Russia, Institute of Electrical and Electronics Engineers, Institute of Radio Engineering and Electronics (Moscow), University of Telecommunications (St. Petersburg), and the Ioffe Physics-Technical Institute (St. Petersburg). By the time this announcement is published, we expect a number of additional government and commercial sponsors.

Internationally recognized plenary speakers will give broad overviews regarding different fundamental aspects and applications of vacuum microelectronics, including RF power devices, flat panel displays, high temperature and radiation hard electronics, and other topics. Contributing papers are being solicited for theoretical and experimental results in all areas of vacuum microelectronics including:

- Fundamental physical problems of the properties, stability, and functioning of vacuum microelectronics devices
- All aspects of theory, simulation and modeling
- Field emission, emission physics, and electron transport
- Physics of noise, stability, reliability,

and reproducibility

- New materials, coatings, overlayers, and treatments

- "Cold" electron sources, e.g., wide and graded bandgap, diamond, ferroelectric, polarized, and ballistic

- Fabrication, micromachining, and processing of 3D nanostructures

- Field ion sources for nanotechnology: principles and applications

- Field emission electron sources for diagnostics: nano- and microstructures

- Work function modification of surfaces and surface diffusion phenomena

- Field Emitter Arrays and multi-electrode structures

- Small scale phenomena and novel applications, e.g., electron holography

- Field Emitter Displays (FEDs), RF Devices, e-beam lithography, etc.

The conference chairman is Academician Yuri V. Gulyaev, Director of the Institute of Radio Engineering and Electronics in Moscow. The co-chairmen are Prof. Vladimir V. Makhov of the Research Institute of Physical Problems in Moscow, and Prof. George N. Fursey of the Bonch-Brue-

vitsch University of Telecommunications in St. Petersburg who is the local conference and technical program chairman. The conference secretary is Dr. Dmitriy V. Glazanov, also of the Bonch-Bruevitsch University of Telecommunication in St. Petersburg.

There will be no parallel sessions so that attendees can participate in all technical sessions. The conference will consist of both oral and poster presentations, and the schedule is being set-up to allow alot of interaction between presenters and attendees.

A large Technical Digest consisting of 5 page extended abstracts will be given to each registered attendee at the beginning of the conference. The conference proceedings will consist of fully reviewed papers and will be published about one year after the conference in the *Journal of Vacuum Science and Technology*.

For additional information, please send e-mail to: [IVMC96@GLAZ.USR.PU.RU](mailto:IVMC96@GLAZ.USR.PU.RU); or send a FAX to: Dr. Dmitriy V. Glazanov, IVMC'96 Secretary, 7-812-315-76-10 or 7-812-314-33-60; or telephone Dr.

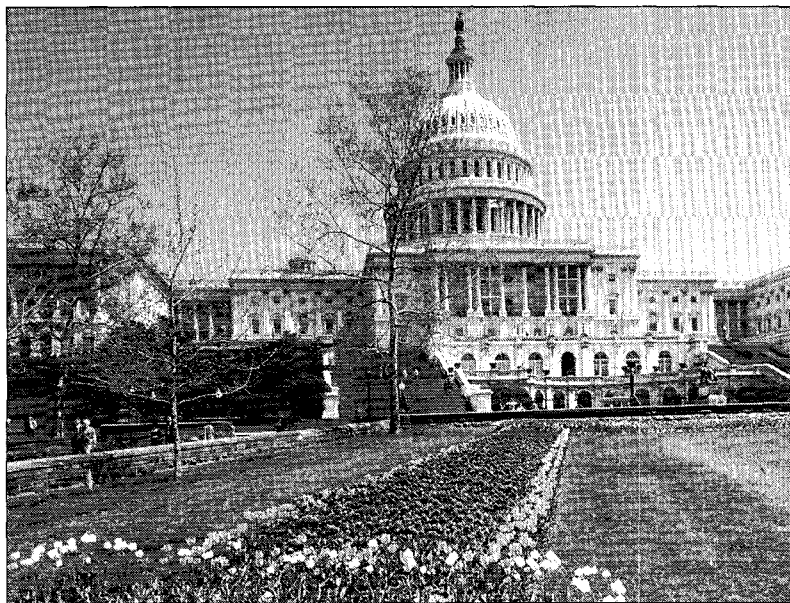
Glazanov at 7-812-589-52-17 or 7-812-589-82-51; or mail a letter to: St. Petersburg Bonch-Bruevitsch University of Telecommunications, nab. r. Moiki 61, 191065, St. Petersburg, Russia; or send a letter to: IVMC'96, P.O. Box 188, Churilton MD, 20733, USA, or FEDEX to IVMC'96, 4663 Solomons Island Road, Harwood, MD 20776, USA; or send e-mail to: [henry.gray@nrl.navy.mil](mailto:henry.gray@nrl.navy.mil)

There are two associated conferences which might be of interest to those attending IVMC'96: one the week before, and one the week after:

- The First International Vacuum Electron Sources Conference  
Eindhoven, The Netherlands,  
July 1-4, 1996  
Contact: Carla Schreurs  
E-mail: [congressoffice@ieb.tue.nl](mailto:congressoffice@ieb.tue.nl)
- The 43rd International Field Emission Symposium  
Moscow, Russia, July 14-16, 1996  
Contact: Prof. Alexander L. Suvorov  
E-mail: [ifes96@ns.itsep.ru](mailto:ifes96@ns.itsep.ru)

— Henry F. Gray  
Naval Research Labs  
Washington, DC

## 1996 IEEE Photovoltaic Specialists Conference (PVSC)



The IEEE Photovoltaic Specialists Conference (PVSC) provides a forum for discussing the full range of issues regarding this power technology, from research on basic materials and cells to the performance and economics of photovoltaic (PV) power systems in various applications.

Since the initial Solar Working Group Conference in 1961, this conference series has reported the steady progress of PV power technology, from its early and enduring role as the preferred power source in space, to the rapidly expanding terrestrial applications that PV is now serv-

ing. Notable achievements recorded along the way include the development of a large, flexible retractable solar array (1968), the first amorphous Si cell efficiency above 10% (1982), the first crystalline Si cell efficiency above 20% (1985), and the first report on a terrestrial power plant of 1 MW size (1984).

The Photovoltaic Specialists Conference provides a variety of vehicles for sharing PV technology information, including a Technical Program for discussing progress and issues in PV research, development or deployment activities, a Conference Exhibition on PV technology, a series of Tutorials on selected topics, and an Auxiliary Program to highlight areas of special interest.

**Technical Program** — The core of the PVSC is the Technical Program of about 350 papers selected through an abstract review process. The Technical Program at this year's conference will include papers and posters in eight areas: III-V and Multijunction Cells, Space Cells, Space Systems, Silicon Cells and Materials, II-VI Materials and Devices, Amorphous Silicon, Terrestrial Module and Balance of System Components, and Terrestrial Systems and Applications. For each area there will be one Plenary Session plus several Oral and Poster sessions. In addition, there will be a Late News session covering important

results achieved after the abstract deadline.

**Conference Exhibition** — Exhibitors from around the world will display every aspect of photovoltaic power systems technology, including cells and modules, PV power system controllers, storage batteries, system design tools, manufacturing equipment, and instrumentation, as well as complete PV power systems and numerous photos and descriptions of PV power applications installed throughout the world.

An exhibit of a village PV power system is planned for this year's conference, to illustrate the role that PV power technology is beginning to fill for the approximately 1 billion village inhabitants on earth that currently don't have access to electricity. This exhibit will complement the International Program session in the Auxiliary Program.

**Tutorials** — This year's conference will include 5 tutorials on (1) Polycrystalline Thin Film Photovoltaics, (2) Managing Photovoltaic Environmental, Health and Safety Hazards from Module Production to Decommissioning, (3) III-V Solar Cells: Fundamentals and Applications, (4) Photovoltaic Balance of System - Issues and Perspectives, and (5) Hybrid Power Systems." Each tutorial registrant will receive a tutorial notebook covering the instruction materials. The tutorials are about 3 hours each. All 4 tutorials will be given on Monday, May 13.

**Auxiliary Program** — In planning each PVSC, the conference committee identifies a few topics that are of particularly timely interest for special emphasis in an Auxiliary Program. This year 3 topics will be covered. The first is an International Program session covering all aspects of the rapidly expanding applications of photovoltaics in developing regions, including systems' designs, installations, and performance; governmental and international agency support programs; local PV technology infrastructure development, education and training, and financing issues. This international program is scheduled for Sunday and Monday, May 12th and 13th.

The second Auxiliary Program event will be a half day session on Photovoltaics in the Built Environment. It will cover the incorporation of photovoltaics in buildings, such as walls and roofing materials, as well as other aspects of the built environment, such as highway sound barriers or parking lot shading structures. Presentations on designs, performance, and economics will be included.

The third Auxiliary Program topic is participation in the political process. This session will cover different approaches to

engaging in decisionmaking through the development and articulation of positions on technology or energy policies to politicians and other decisionmakers.

**Other Events** — In addition to the various program and exhibit activities outlined above, the 25th PVSC will also include a dinner celebrating this 25th anniversary occasion. Several receptions and tour opportunities are also planned. The conference will also feature a High School PV system design competition and a Fun Run.

**Conference Details** — The 25th IEEE Photovoltaic Specialists Conference will be held May 12 through 17 at the Hyatt Crystal City in Arlington, Virginia. This location is a part of the Washington D.C. area, noted for its numerous museums, parks, gardens, historical buildings

and monuments as well as a broad selection of fine restaurants.

A total registration of about 700 people is projected.

The General Chair for this year's conference is Dr. Eldon Boes of the National Renewable Energy Laboratory, and the Program Chair is Dr. Sheila Bailey of NASA Lewis Research Center.

For more information on the conference, contact Dr. Boes by E-Mail at [boese@tcplink.nrel.gov](mailto:boese@tcplink.nrel.gov), or call (202) 651-7525 (Fax: 651-7502). You can also get up-to-date information on the conference at its Home Page site on the Internet, <http://ieeepvsc.nrel.gov>.

— Eldon C. Boes  
National Renewable Energy Laboratory  
Golden, CO

## 31st Intersociety Energy Conversion Engineering Conference IECEC-96



The Thirty-first Intersociety Energy Conversion Engineering Conference, IECEC-96, organized by the Electron Devices and the Aerospace and Electronic Systems societies, will be held at the Shoreham Hotel in Washington, D.C. on August 11-18, 1996. This series of conferences was initiated by the IEEE in the mid-1960s to provide an interdisciplinary, intersocietal forum for the presentation and discussion of energy technology issues. Co-sponsored by the American Society of Mechanical Engineers (ASME), the American Institute of Aeronautics and Astronautics (AIAA), The American Society of Chemical Engi-

neers (AIChE), The American Nuclear Society (ANS) and the Society of Automotive Engineers (SAE), the IECEC now deals with a broad spectrum of energy topics from aerospace power systems through terrestrial utility applications, electric vehicles and military requirements to environmental and policy issues. It has now become a full-fledged international event featuring invited speakers, plenary discussions of major issues, panels on specific topics and wide-ranging technical sessions.

The Washington, D.C. location provides a particularly appropriate location for the 1996 Conference. Proximity to the



government departments and agencies and to groups representing industry, environmental viewpoints and public concerns enables participants to be involved with all aspects of the world of energy. It is also a splendid center for family activities, both within the city and in the surrounding region. The Shoreham Hotel not only provides a unique atmosphere for IECEC'96 but is across the street from the Woodley Park-Zoo station, just three stops north of Metro Center, the hub of the system. It is also Metro accessible from National Airport and, for longer distance and international travelers, it has good connections to both Dulles and Baltimore-Washington International Airports. The museums, monuments and other features on and around the Mall are best reached by Metro; and others, such as Arlington National Cemetery; are linked by "Tourmobiles" which follow a circular route from the Mall. Georgetown is linked via a "trolley" and historic Alexandria is on the Metro. There will be a Conference office devoted to assisting participants and their families with local visits. Excursions to historic sites are being arranged and one of the social events of IECEC'96 will be a Potomac River dinner cruise on board the Spirit of Washington. This will be on Tuesday evening, August 14th at 7:00 p.m. and, as space is limited, early booking for this popular event is advised.

The technical program includes the following topics:

**Aerospace Power Systems:** aircraft power, automation and simulation, environmental effects, space nuclear power, space power requirements and issues, space station power and terrestrial applications of space power;

**Aerospace Power Technologies:** batteries, fuel cells and static and dynamic energy conversion for space, power electronics, power management and distribution, electric propulsion, high voltage and conductorless energy transmission;

**Conversion Technologies:** advanced cycles, heat engines and heat pumps, thermoelectric, thermionic and magnetohydrodynamic converters, cogeneration and advanced fossil fuel combustion and fusion energy systems, applications of superconductivity;

**Electrochemical Technologies:** batteries and fuel cells for terrestrial technologies and their applications;

**Environmental Impact:** alternative

## CALL FOR BOOK PROPOSALS

The IEEE Electron Devices Society, in conjunction with the IEEE Press, is soliciting proposals and original manuscripts for book publication relating to the theory, design, and performance of electron and ion devices, solid-state devices, integrated electronic devices, optoelectronic devices, and energy sources. It is intended that books sponsored by the Electron Devices Society will be published by the IEEE Press.

We are particularly interested in original single-author (or multi-author) books and original edited books with contributed chapters by experts in the field. Collections of papers in the form of reprint books will only be considered if substantial original material of a tutorial or background nature is included in order to illuminate the papers. New issues of classic and out-of-print books will also be considered.

Advantages of publishing a book through the IEEE Press include:

- Established advertisement and distribution network of IEEE
- Superior editorial support and production capabilities of the IEEE Press
- Competitive royalties and attractive pricing
- Peer review by leading experts in partnership with you
- The prestige of the IEEE and ED Society logos on your book

A basic proposal should include the following materials:

- A prospectus commenting on the rationale for your book, the targeted audience and the potential market, and the author's experience reflecting the ability to accomplish the project
- Table of contents
- Sample chapters, if available

For a complete set of IEEE Press Proposal Guidelines, or for any additional information about the IEEE Press, please contact:

Lisa Dayne, Review Coordinator  
IEEE Press  
445 Hoes Lane  
Piscataway, NJ 08855-1331  
E-mail: [pressbooks@ieee.org](mailto:pressbooks@ieee.org)

Electron Devices Society Liaison to the IEEE Press - Kwok Ng ([k.ng@ieee.org](mailto:k.ng@ieee.org))

fuel and electric vehicles, power plant and industrial emission control, waste disposal, global issues and nuclear waste management;

**Energy Systems:** advances in electric power, alternative fuels and their impacts, electrical, mechanical and thermal storage, biomass in energy systems, nuclear fission and transportation;

**Policy Impacts on Energy:** domestic and international policy considerations, energy for developing countries, energy modeling and forecasting and environmental strategies;

**Renewable Energy Sources:** geothermal, waste and biomass sources, wind and photovoltaic and solar thermal technologies and systems, hydrogen as a fuel, and heating and cooling;

**Stirling Engines:** applications to power generation and conversion, analysis and testing, coolers and heat pumps,

and modeling and optimization;

**Thermal Management:** high speed rotation machine cooling, heat pipes, cryogenic heat transfer, space thermal and environmental control systems, electronic and power system component thermal analysis, two-phase heat and mass transfer.

Throughout all sessions, the content will emphasize current and expected developments and will range from reports on recent experiences to simulation and modeling and to advanced concepts. To be included on the mailing list for further information and the IECEC 1996 registration packet, contact the Conference Manager, Ms. Eleanor Dicks, Tel: 301-946-1586, Fax: 301-946-4374, E-mail: [HMJutland@aol.com](mailto:HMJutland@aol.com). The Conference Office address is 10400 Connecticut Avenue, Suite 404 Kensington, MD 20895, USA. See you at the IECEC'96.

## Society News

Martin A. Green



### Martin A. Green Winner of 1995 J. J. Ebers Award

The J. J. Ebers Award, the highest form of recognition for technical accomplishments given by the Electron Devices Society, was awarded to Martin A. Green at the opening ceremony of the International Electron Devices Meeting (IEDM) in Washington, DC on December 11, 1995. This award was established in 1971 with the intent to encourage progress in electron devices

and to commemorate the life of Jewell James Ebers, and distinguished pioneering contributor to transistor modelling who helped shape the understanding and technological development of electron devices. The award recognizes and honors individuals for accomplishments of unusual merit and "for outstanding technical contributions to electron devices." The recipient is awarded a certificate and a check for \$2,000 at the annual IEDM.

The citation for the accomplishments of the 1996 J. J. Ebers Award recipient, Martin A. Green, read as: "For sustained technical leadership in the field of silicon photovoltaic solar energy conversion." Dr. Green was born in Brisbane, Australia and obtained his Bachelors and Masters of Engineering from the University of Queensland and his Ph.D. in Engineering Physics from McMaster University in Canada in 1974. His doctoral dissertation addressed new properties and applications of metal-

insulator-semiconductor tunnel diodes, which started him off on his focus on the research and technology of solar energy conversion. Following his graduate work, he joined the University of New South Wales, where he and his group have made numerous contributions to the understanding of silicon photovoltaic solar energy conversion, demonstrated the improved understanding with laboratory results, and transferred these results into commercially manufacturable products. The accomplishment of 24% cell efficiency stands out in the field as a 40% relative improvement upon the best results obtained prior to 1983. He is the co-inventor of the buried contact solar cell, now the highest efficiency cell in volume production.

Martin is currently the Director of the Centre for Photovoltaic Devices and Systems at the University of New South Wales. He is a Fellow of IEEE, the Australian Academy of Sciences and the Australian Academy of Technological Sciences and Engineering. He is the author of numerous technical journal publications and books, an organizer of meetings and leader of committees devoted to photovoltaics.

The EDS is pleased to recognize and honor Dr. Green for his outstanding technical contributions to the important field of silicon photovoltaic solar energy conversion over the past two decades.

Lewis M. Terman



### Terman Received the 1995 EDS Distinguished Service Award

Lewis M. Terman was the second recipient of the EDS Distinguished Service Award. This award was established in 1993, and is intended to recognize and honor service to the EDS and its sponsored activities. The award was presented to Dr. Terman at the 1995 IEDM.

Dr. Terman received his Ph.D. degree in Electrical Engineering in 1961 from Stanford University. He joined IBM Research in 1961. He is the author of the first publication on the C-V measurement of surface states in MOS structures. He did pioneering work on MOS memory. He was an inventor or co-inventor of many circuits used in memory products by IBM and

other companies. These inventions include the shift register memory, the four-transistor memory cell, and the substrate-plate trench DRAM cell.

Dr. Terman has contributed to IEEE and EDS activities for more than thirty years. He was Guest Editor/Associate Editor/Editor of the *IEEE Journal of Solid-State Circuits* from 1972 to 1977. He served as Treasurer of the Solid-State Circuits Council, and AdCom member of the Circuits and Systems Society. He served as Program/Conference Chair for several IEEE/EDS sponsored conferences, and has been involved with the IEEE Technical Activities Board since 1990. He was an EDS AdCom member, served as the EDS Awards Chair from 1987 to 1990, and served as EDS President in 1990 and 1991. He led major revisions to the EDS Constitution and Bylaws, EDS field of interest statement, and expansion of the number of elected AdCom members. Currently, he is Vice President of the Solid-State Circuits Council, and Chair of the IEEE Awards Planning and Policy Committee.

Dr. Terman is a Fellow of IEEE and a Fellow of the American Association for Advancement of Science, and the recipient of the 1995 IEEE Solid-State Circuits Technical Field Award.

### IEEE Fellow Nominations Kits & Submission Date

Nomination kits for the 1997 class of IEEE Fellows are now available from the IEEE Corporate Activities Department. Please contact:

Staff Secretary,  
IEEE Fellow Committee,  
445 Hoes Lane, Piscataway, NJ,  
USA 08855-1331;  
Tel: 1-908-562-3843;  
Fax: 1-908-981-9019;  
E-Mail: "j.kilyk@ieee.org"

This year, the deadline for the submission of nominations has been moved up to **March 15, 1996**. Please make note of this change in schedule!

## EDS Region 8 Chapters Meeting

Michael S. Adler



On September 24, 1995, the Electron Devices Society (EDS) held its third annual Region 8 Chapters Meeting in the Convention Center at The Hague in The Netherlands. The 1995 meeting, as was the case with the previous two meetings, was held in conjunction with the European Solid-State Device Research Conference (ESSDERC). The attendance at the meeting has grown from 10 in 1993 to over 35 in 1995, reflecting the growth in EDS Region 8 chapters from 8 to 25 over this same period of time. The meeting at The Hague was highlighted by the attendance of representatives from the six new chapters recently formed in Eastern Europe by the Microwave Theory and Techniques Society (MTTS) and EDS.

The meeting was hosted by: Mike Adler, EDS Region 8 Co-Coordinator and 1996 IEEE Division 1 Director; Lou Parrillo, 1996 EDS President; and Imre Mojzes, EDS Region 8 Co-Coordinator. In addition, the meeting was attended by representatives from the EDS Region 8 chapters, IEEE Region 8, the IEEE Russia Section, the Circuits and Systems Society (CASS), the Lasers and Electro-Optics Society (LEOS) and MTTS. Specifically attending were: chapter chairs/representatives from 23 of the 25 EDS Region 8 chapters; Peer Martin Larsen, Region 8 Director; Henrich Lantsberg, IEEE Russia Section Vice-Chair; Rolf Jansen, MTTS Transnational Liaison and IEEE Division 4 Director; Ruey-Wen Liu, CASS President; Franco Maloberti, CASS Region 8 Vice President; and Giok-Djan Khoe, LEOS European Representative.

Following the opening presentations by Mike Adler and Lou Parrillo, Peer Martin Larsen discussed the need for Region 8 and the societies to jointly sponsor mini symposia in Region 8. This would be done on a smaller scale than the IEEE TAB Colloquia and would provide the chapters with high quality content for their meetings as well as being a draw for new members.

Rolf Jansen spoke next and welcomed the representatives from the six new

MTT/ED Eastern Europe chapters. These chapters were formed over the past two years by a joint project undertaken by MTTS and EDS whereby IEEE, MTTS and EDS memberships and several publication subscriptions were subsidized for 1995 for about 80 individuals (12-14 members per chapter). MTTS and EDS will continue their support for the six chapters for both 1996 and 1997. Rolf Jansen and Bill Van Der Vort, EDS Executive Director, did the bulk of the work in organizing these chapters. Rolf spoke of the need to support these chapters now that they are formed and he



also endorsed Peer Martin Larsen's proposal for a joint symposia.

Ruey-Wen Liu and Giok-Djan Khoe spoke next and both commented that the EDS Chapters Meeting was a very valuable activity to help support chapters. They also expressed a strong interest in joining EDS and MTTS in any future initiatives to form new chapters in Eastern Europe.

Presentations were then given by each of the EDS Chapter representatives attending. The following points were the main topics and issues raised.

There was very strong, and heartfelt thanks given to both EDS and MTTS for the support for the six new chapters in Eastern Europe as well as for the IEEE journals that have been received by 15 libraries in the newly independent countries and Russia. The latter is a program sponsored by the IEEE RAB/TAB Transnational Committee whereby microfiche copies of journals from 21 IEEE societies/councils for the past 10 years (1985-1994) were distributed to 15 libraries in Eastern Europe, with plans to continue the subscriptions through 1997. It was extremely moving to hear the reac-

tions of the chapter representatives to receiving IEEE journals. As expressed by many attendees, it is vital that EDS continue its support for all new chapters, and in particular, those in Eastern Europe.

It was also gratifying to hear that the EDS chapters are sponsoring successful technical meetings, with many being international and/or joint ventures with partner Region 8 chapters. In particular, in 1995, the France Chapter held the "Topical Meeting on Nomadic Microwave Technologies and Techniques for Mobil Communications and Detection"; the UKRI Chapter held its third Workshop on High Performance Electron Devices for Microwave and Optoelec-

tronic Applications; the Romania Chapter continues to hold its successful International Semiconductor Conference; and the Yugoslavia chapter again held its International Conference on Microelectronics. In 1996, the International Vacuum Microelectronics Conference will be held in St. Petersburg, Russia and the European Workshop on Low Temperature Electronics will be jointly sponsored by the EDS France and Benelux chapters.

There was a significant amount of interest in having a regional distinguished lecturer program and a traveling colloquia/workshop. These two topics were the ones most mentioned relative to areas where EDS could do more to help the chapters. A suggestion was made to ask the Region 8 Chapter Chairs to nominate distinguished lecturers from their region for these programs. Strong support was voiced for the MTT/ED Student-Teacher and Research Engineer/Scientist Program (STAR). Several attendees indicated that they would like more specific information on how to organize this activity and interest was expressed to expand the program to also



include men in Eastern Europe and blacks in South Africa.

There was universal unhappiness about inaccuracies in membership lists received from the IEEE and consensus on the need for e-mail addresses for chapter members. The Israel Chapter wished to have a Home Page for each chapter listed under the IEEE World-Wide Web (WWW) address and to form a news group on the WWW that would allow chapters to easily list events and send news to other chapters.

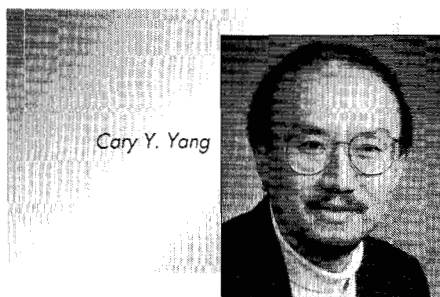
There was general support for the con-

cept of videotaped technical material for use in chapter meetings (e.g., IEDM videotaped short courses); however, it was expressed that the quality of the EDS tapes was poor. It was recommended that there be a live expert present to answer questions and that there be an increase in the use of live satellite courses.

Relative to the Chapters Meeting itself, there was universal agreement on its extremely positive value. The biggest benefit stated was the establishment of personal contacts among the attendees. The major

complaint was the length of the meeting which ran from 8:00 a.m. to 6:30 p.m. The suggestion was made to better structure the presentations from chapters and to avoid having the chapters report on the general cultural information of their respective countries. Future meetings should be more topical in nature and specific information should be required from the chapters in advance. Also, the chapters requested EDS to send the invitations to future meetings on stationery from the country hosting the meeting in order to facilitate obtaining visas.

## EDS Region 10 Chapters Meeting



Cary Y. Yang

This is the first ever EDS Chapters meeting held in Region 10. It took place in the afternoon and evening immediately before IEEE TENCON '95, which was held in Hong Kong. Partly because of TENCON, the Chapters meeting was very well attended. The Australian Capital Territory Section ED/LEO Chapter was represented by Y.T. Yeow, Beijing ED Chapter by Qing A. Huang, Hong Kong ED Chapter by Man Wong, India Council ED/MTT Chapter by Shibani K. Koul, Malaysia ED Chapter by Burhanuddin Yeop Majlis, Seoul Section ED Student Branch Chapter by Faculty Advisor Kae Dal Kwack, Singapore CPMT/

ED/R Chapter by Daniel Chan, Taipei Chapter by S.C. Sun, and Tokyo Chapter by Hisakazu Mukai. In addition, Paul Y.S. Cheung, Region 10 Director, Shojiro Asai, EDS AdCom Member, and Kunio Tada, EDS Region 10 Technical Activities Co-Chair, were also present. The meeting was hosted by Cary Y. Yang, EDS Sections/Chapters Chair, and local arrangements were made possible by Paul Cheung, who graciously provided the use of his conference room at the University of Hong Kong.

The meeting was intended to be an informal gathering of Region 10 EDS Chapter representatives, whereby they would have the opportunity to exchange information and ideas about issues of common interest and concern. After a brief introduction by Cary Yang, Paul Cheung gave an overview of Region 10 and its activities. Paul emphasized the fact that Region 10, while it was formed to incorporate the "rest of the world" some years back, should now be treated as the Asia Pacific Region. His talk was followed by Cary Yang's presentation of highlights of

activities organized, sponsored, and overseen by EDS AdCom, as well as statistics on Chapters and membership. The fact that Region 10's EDS membership is the fastest growing among all Regions did not escape notice. All attendees seemed to acknowledge the immense contrast of sizes among Region 10 Chapters, with Tokyo having close to 1,000 members on one hand, and the recently formed Singapore and Hong Kong Chapters on the other. The issue of Fellow election was raised. The proportion of Fellow-grade members in Region 10 is still small compared to other Regions.

The meeting then turned its focus to Project PRISM, which stands for Pacific Rim International Symposium on Microelectronics. Paul Cheung had given some background of this proposed event in his earlier presentation. The central theme of PRISM is to pool together existing conferences on microelectronics held in Region 10, with the hope of consolidating them into a single world-class event in the long term. The plan involves annually sponsoring an existing conference by Project PRISM, with its venue rotated among the cities of Hong Kong, Seoul, Singapore, and Taipei. A list of conferences currently held in Region 10 was then made up during the meeting, followed by intense discussions on various aspects of the concept as well as logistics. There was a strong sense that such an event requires the participation and support of major existing conferences in Region 10, and there might be challenges in convincing the current sponsors of these conferences to continue their support under the new format. Cary agreed to report the proposal back to ExCom/AdCom for comments and suggestions.

Everyone in attendance was enthusiastic about holding a Region 10 Chapters Meeting periodically, and it was suggested that it be held every other year at some convenient location in the Region.



# Regional and Chapter News

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

### ED Boston Chapter

— by Elias Towe

The last five weeks of 1995 were busy for most EDS members on the East Coast. Three major conferences were held in this region: The Materials Research Society (MRS) Meeting in Boston, MA from November 26 through December 1, The International Semiconductor Device Research Symposium (ISDRS) in Charlottesville, VA from December 5-8, and the International Electron Device Meeting (IEDM) in Washington, DC from December 10-13. Most members of the Central Virginia Section of EDS/MTS attended the International Semiconductor Device Research Symposium in Charlottesville, Virginia. This is a biennial meeting co-sponsored by the IEEE MTT Society, the European Physical Society, the Russian Physical Society and URSI. It is financially supported by the Office of Naval Research and the Army Research Office. The emphasis of the Symposium is mostly on novel devices and physics, modeling and simulations, and new electronic and photonic materials.

The highlights of the meeting included the presentation of the Aldert van der Ziel Award to Professor Lester Eastman of Cornell University. This award, sponsored by the Westinghouse Electric Company, is given biennially to an individual whose work best exemplifies the spirit of Prof. van der Ziel's "long, distinguished and illustrious career as an educator and a research scientist." Also presented at the Symposium was a best student paper award. The winner of the Best Student Paper Award for ISDRS-95 was Erno Klaassen, a doctoral candidate at Stanford University; he won the award for his paper entitled "Thermally Based Systems in CMOS Technology."

Other individuals associated with this Symposium who were honored with awards elsewhere included Professor Michael Shur of the University of Virginia, and Dr. Federico Capasso, Head of the Quantum Phenomena and Device Research Department at AT&T Bell Laboratories. Prof. Shur, who is ISDRS Past Junior Symposium Chair, was named a Fellow of the American Physical Society and cited

for "contributions to the physics of ballistic transport." Dr. Capasso, who was the 1995 ISDRS Co-Chair, was awarded the Materials Research Society Medal for "groundbreaking work in engineered semiconductor research and design."

— Elias D. Towe, Editor

### Report of 1995 GaAs IC Symposium

— by Mark Wilson and Elissa Sobolewski

This year's technical program consisted of 74 papers (12 invited) which were selected from 143 world-wide submissions. They covered a wide range of topics including GaAs IC's for wireless communications, optical communications systems, advanced technologies such as Complementary GaAs and InP based heterojunction bipolar transistors and 150 mm diameter GaAs substrates.

In addition to the 12 technical sessions, there was a short course on "Practical RF Circuits for Wireless Applications", a primer short course on "Basics of GaAs IC's", and three panel sessions: "Cost Driven Multifunction Millimeter Wave IC's: Are They Possible?", "High Speed Digital Shakeout: Co-Existing With Silicon", and "Technology Choices for Commercial Power Amplifiers".

At the symposium there were 525 registrants. They enjoyed hot topics such as "Low Voltage GaAs ICs in High Volume Use for Wireless Telephones", "Heterojunction Bipolar Transistors for Commercial Applications", "High Power Pseudomorphic HEMT's for Millimeter Wave Amplifiers", "What is the role of GaAs in Digital Applications", in addition to the Halloween party (dinner reception) at the San Diego Sea World.

### AP/ED/EMC/LEO/MTT/UFC Phoenix Section

— by Craig Gaw

The Phoenix Section Waves and Devices Chapter (WADCHAP) is a joint chapter representing six member societies. Technical seminars given by invited speakers are held 1-2 times per month during the months of January-May and September-December. Every other year the chapter organizes an all day workshop in which several nationally recognized technologists are invited to discuss the latest results and perspectives in their respective areas of expertise. The last workshop held November 14, 1994 was entitled "Enabling Tech-

nologies for Portable Communications and Computing". Nine nationally recognized lecturers were invited to present a talk in their respective areas of expertise. The workshop was well attended by local engineers (88 attendees). The next workshop is being planned for the Fall of 1996.

During 1995, the chapter sponsored nine seminars.

1) Mudha Gupta of Hughes (2/9) on "New Concepts in RF Packaging and System Integration". He specifically discussed the flip chip technology as applied to GaAs MMICs and its use in microwave multi-chip modules.

2) Adolfo Reyes of Motorola (3/9) on "Coplanar Waveguides and Microwave Inductors on Silicon Substrates". He demonstrated the potential of using high-resistivity silicon as a low-cost, low-loss microwave substrate, and compared to those made on GaAs.

3) Jerry Weiss of MIT Lincoln Laboratory (3/14) on "Performance Capabilities of the Ring-Network Circulator for Integrated Circuits". Solutions were presented to illustrate the potential for novel, efficient design with options including miniaturization, self-magnetization, reversible broad band and superconducting operation.

4) Dean Barker of Motorola (3/23) on "Field Emission Displays: Technology Overview and Prospects". The field-emission displays were shown to have the potential to be brighter, require lower power and less cost than liquid-crystal displays.

5) Professor Eric Cross of Pennsylvania State University (4/20) on "Ferroelectric Materials for Electromechanical Transducer Applications". Professor Cross explored the special characteristics of ferroelectric materials which make them highly suitable for applications as both sensors and actuators in electromechanical "smart" systems.

6) Niloy Dutta of AT&T Bell Laboratories (10/10) on "Optical Interconnection for Large Computing and Switching Systems" (89 attendees!). The advantage of this technology for large high speed systems was discussed. Progress on using surface emitting laser array based transmitters and integrated receivers was presented.

7) Professor Mahmoud Fallahi of University of Arizona (10/26) on "Circular Grating Surface-Emitting DBR Lasers". CG-DBR SELs are useful because of their low-divergence which simplifies fiber coupling, the ease of fabricating 2D arrays, and the

ability to characterize at wafer level. These lasers provide circularly symmetric, low-divergence and high-power emission.

8) Professor Badawy Elsharawy of Arizona State University (10/31) on "Dielectric Resonator Filters and Oscillators: New Concepts and Designs". A traditional Chebyshev or maximally flat approach to dielectric resonator band-pass filters was presented, along with an approach which achieves an elliptic response by adding band-reject notches at the input and output of the band-pass segment of the filter.

9) At the last meeting of the year, Richard Powell, Director of the Optical Science Center at the University of Arizona reviewed the "Optical Science Research Projects at University of Arizona", highlighting the R&D activities in quantum optics, surface emitting lasers, optical data storage, optical imaging, and remote sensing.

#### **ED/MTT Oregon Section Joint Chapter**

— by J.S. Prasad

The recent ED activities of the Oregon joint chapter were less than satisfactory. After the departure of Krishna Shenai two years ago, very little ED activity took place at the chapter. Since many of the local companies are short of advanced fabrication facilities, we needed a new support base for maintaining the interests of EDS members. To revive the activity, last year Prof. Vijay Tripathi of Oregon State University was elected as the chapter chair, J.S. Prasad as ED vice-chair, and Ed. Godshalk as MTT vice chair. Both Tripathi and Godshalk have an interest in MTT, and therefore, several MTT talks have been held. J. Prasad has moved to California, the chapter is actively looking for an ED vice-chair to resurrect the ED activity. This year, we have noted that many semiconductor industries moved to Oregon and we expect our activity will pick up this coming year. In the past, there were lectures organized by the Oregon Center for Advanced Technology Education which were well attended by IEEE members.

#### **Announcement of the 1996 Custom Integrated Circuits Conference (CICC)**

— by Brian Antao

The 1996 Custom Integrated Circuits Conference will be held May 6-8, 1996 at the Town and Country Hotel in San Diego, California. Sponsored by the Electron Devices Society, CICC is the leading technical conference supporting the design,

fabrication and integration of application specific integrated circuit (ASIC) technology. Through technical and educational sessions, panel discussions, vendor exhibits and sessions, CICC provides a unique opportunity for circuit designers, CAD developers, device manufacturers and ASIC users to present, review and discuss new developments and industry trends. This diverse attendance makes CICC a unique forum, and ensures interesting discussion from a broad spectrum of viewpoints.

The core of CICC is the approximately 140 technical papers presented during the three days of technical sessions. Topics in signal processing and communications will be covered, as will analog mixed-signal circuits, and systems. Both full custom and semi-custom approaches, using programmable elements and gate arrays, will be addressed. Important issues in design automation and design methodology will be covered, along with advances in circuit simulation and modeling. Device fabrication, reliability and testing improvements will also be presented, making CICC the single best conference to attend to gain a broad understanding of all the facets in the dynamic area of ASICs.

Supplementing the technical sessions, the evening panel discussions which will provide a more interactive format for considering key issues and trends in the industry. Participants and attendees at these lively discussions will gain a deeper understanding of the topics of low voltage design limitations, MOS modeling issues and requirements for mixed signal design tools. Preceding the conference, a full day of educational sessions will provide extended tutorials on key areas, allowing practicing professionals to gain familiarity with areas outside their specialties. Respected lecturers in the fields of low power, clock generation, video/image compression and digital communications designs will be present.

Conference attendees will have the opportunity to contact multiple vendors in related product areas in the extensive exhibits area central to the conference facilities. Supplementary marketing sessions will be held in concert with the technical sessions providing technical presentations of key new products and capabilities of interest to the CICC audience. Santa Diego, which is easily accessible from the San Diego airport, is convenient to a wide array of activities. For registration information and general inquiries about CICC, please contact the Conference Manager, Melissa Widerkehr,

CICC, 101 Lakeforest Boulevard, Suite 270, Gaithersburg, MD 20877; TEL: (301) 527-0902; FAX: (301) 527-0994.

— Paul K. L. Yu, Editor

## **Europe, Middle East & Africa (Region 8)**

### **ED Benelux Chapter**

— by Cor Claeys

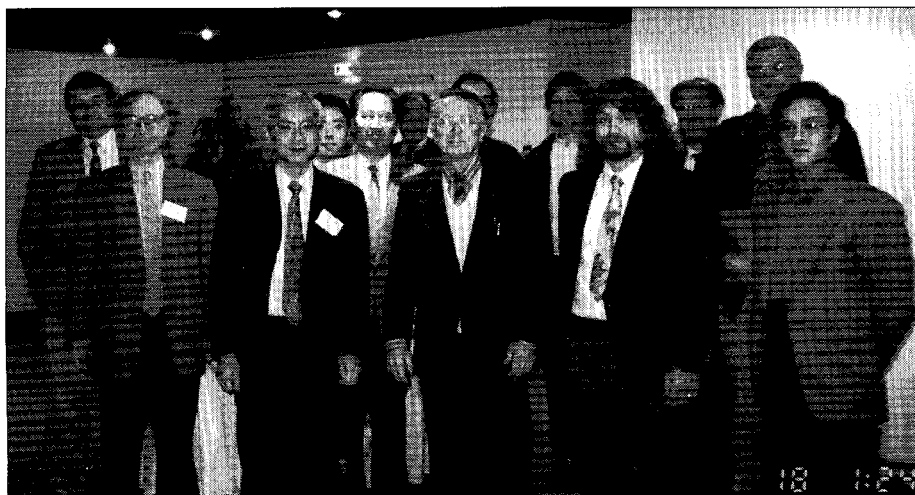
In 1996 the ED Benelux Chapter together with the ED & MTT France Chapter will organize the 2nd European Low Temperature Electronics Workshop (WOLTE-2) on June 26-28, 1996 in Leuven, Belgium. According to the submitted abstracts, there will be international participation from about 20 countries. For more information, contact Prof. Cor Claeys, IMEC, Leuven, Belgium. In 1996, the ED Benelux Chapter is also technically supporting the 1996 Int. Symp. on Ultra Clean processing of Silicon Surfaces (UCPSS) on Sept. 23-25 in Antwerp, Belgium. For more info., contact Dr. Marc Heyns, TEL: 32-16-28-13-48; FAX: 32-16-28-12-14. Finally, the Chapter is technically supporting the 1996 European Symp. on Reliability of Electron Devices, Failure Physics and Analysis on Oct. 8-11 in Enschede, The Netherlands. For more info., contact Prof. Herman Maes, TEL: 32-16-28-12-83; FAX: 32-16-28-15-01. For further information, please contact the Chapter Chairman: Prof. Cor Claeys, IMEC VZW, Kapeldreef 75-B3001 Leuven, Belgium; TEL: 32-16-281-328; FAX: 32-16-281-214; E-mail: claeys@imec.be

### **ED/MTT France Chapter**

— by Robert Adde

The 1995 Chapter event was the IEEE International. Topical Meeting on "Nomadic Microwave Technologies and Techniques for Mobile Communications and Detection", (NMTTMC'D'95) held on Nov. 16-17 in Arcachon, nearby Bordeaux. The program with 33 papers from eight countries including 11 invited papers created a lively atmosphere among the fifty attendees (see picture on page 12). There were avid discussions about silicon CMOS and BiCMOS as well as GaAs technologies.

In 1996, the Chapter will be involved in the organization and co-technical sponsorship of the 4th European Gallium Arsenide And Related III-V Compounds Applications Symposium (GAAS'96) in Paris, France, June 5-6, 1996. As part of GAAS'96, an IEEE Joint European Chapter



1995 International Topical Meeting on Nomadic Microwave Technologies and Techniques for Mobile Communications and Detection in Arcachon, France.

CAD Workshop will take place on June 7, 1996. Please contact: Prof. Christian Rumelhard, CNAM; TEL: 33-1-40-27-21-79; FAX: 33-1-40-27-24-81; E-mail: rumelhard@cnam.fr. For further information, please contact the Chapter Chairman: Dr. Robert Adde, IEF Bt 220, UPS, 91405 Orsay; TEL: 33-1-69-41-78-50; FAX: 33-1-60-19-25-93; E-mail: adde@ieeeparis-sud.fr or r.adde@ieee.org.

### ED Germany Chapter

— by Klaus Heime

The ED Germany Chapter and AP/MTT Chapters have recently decided to form a joint Germany AP/ED/MTT Chapter. The aim is to concentrate and intensify IEEE efforts in Germany. For further information, please contact: Prof. Klaus Heime, RWTH Aachen, D-052056 Aachen; TEL: 49-241-807746; FAX: 49-241-8888199; E-mail: mailbox@enterprise.rwth-aachen.de.

### ED Central and South Italy Chapter

— by Paolo Spirito

The Chapter will technically co-sponsor the IEEE International Conference on Microelectronics Test Structures (ICMTS'96) in Trento on March 1996. For further information, please contact Chapter Chair: Dr. Paolo Spirito, Univ. Naples; FAX: 39-81-5934448; E-mail: Spirito@dispo.dis.unina.it.

### ED Spain Chapter

— by Ramon Alcubilla

The ED Spain Chapter held its first meeting on October 24, 1995. Besides the election procedure, the possibility of organizing a Spanish ED Conference was studied. For further information, please contact Chapter Chair: Prof. Ramon Alcubilla, FAX: (93) 4016757, E-mail: alcubilla@eel.upc.es.

— Robert Adde, Editor

### ED Sweden Chapter

— by Mikael Ostling

During January and the first part of February, a video course "Interconnects for the 90's" from the series of IEDM short courses was shown. Later during spring another of the short courses in the series will be given.

### MTT/AP/ED Finland Chapter

— by Ari Shivila

On September 26, 1995: Dr. Michael Adler (General Electric, Schenectady, NY) gave a presentation on "High-density electronic packaging". The Chapter also discussed with him the new chapter business and problems in trying to penetrate the former Soviet Union and establish chapters there. The chapter is working together with the existing FSU Chapters (St. Petersburg and Moscow) in organising a workshop "Chiral'96 - Int'l Workshop on Electromagnetics of Chiral, Bi-isotropic, and Bi-anisotropic Media" to be held on a riverboat between Moscow and St. Petersburg on 23-30 July 1996. The ED Society is a technical co-sponsor of this workshop.

— Mikael Ostling, Editor

### MTT/ED/AP/LEO UKRI Joint Chapter

— by Terry H. Oxley

Chapter technical activities during the 1995 calendar year have surpassed previous years. Held at venues across the UKRI region, seventeen events encompassed ten sponsored evening lectures, four cooperatively supported one-day meetings, a 3-day membership booth and two sponsored one-day meetings. The chapter particularly welcomed the MTT-S distinguished Lecturer Daniel Swanson in its lecture series. Two highlights of the program were the "1st

High frequency Postgraduate Student Colloquium" held at Belfast and the 3rd Workshop on "High Performance Electron Devices for Microwave & Optoelectronic Applications" (EDMO '95) held in London.

The Student Colloquium was reported in the January issue of the EDS Newsletter and is planned again for Manchester in 1996. EDMO'95 received even greater response than EDMO'94. It attracted about 60 attendees and 32 papers and was divided into two poster and six orally presented sessions. The workshop included a large international presence with contributions from UK, Ireland, Singapore, Belgium, Germany, Switzerland, The Ukraine and The Netherlands. Sponsored by the Chapter and King's College London, the event had the technical co-sponsorship support of EDS and was cooperatively supported by MTT-S, LEOS and the national IEE and IOP. EDMO'96 is planned for Leeds.

After completing a four year term, Terry Oxley is stepping down as Chapter Chairman. The new Chairman, as of March 1996 is Dr. Neil Williams, ERA Technology Ltd., Cleeve Road, Leatherhead, Surrey KT22 7SA, UK; TEL: 44-1372-367061; FAX: 44-1372-367099; E-MAIL: info@era.co.uk

### ED/MTT Egypt Chapter

— by Ibrahim Salem

The Chapter planning meeting held 16th November 1995 discussed EDS technical activities and the IEEE TAB public relations (letter of August '95). Plans are in process for the 13th National Radio Science Conference (NRSC '96) to be held 19-21 March 1996. Paper submissions have been good. The 14th Conference NRSC '97 will be held at Cairo University. The call for papers was issued in March '96. Distinguished Lecturers are particularly welcome. For further information, please contact the Chapter Chairman: Professor Ibrahim S. Salem, 17 Elqouba Street / 3, Roxy Heliopolis, Cairo - 11341, Egypt; TEL: 20-2-258-0256; FAX: 20-2-349-8217.

### ED Israel Chapter

— by Nathan Croitoru/Gady Golan

On Thursday, 30th November 1995 at the Center for Technological Education - Holon (CTEH), the Chapter held a second tutorial using the "Semiconductor Manufacturing IEDM Videotape Short Course." The meeting, opened by Professor Nathan Croitoru and Professor A. Poled from CTEH, included an introductory lecture on advanced microelectronics technologies by Dr. Gady Golan, the video presentation, an invited

lecture by Dr. Irit Halkon from ELTA IAI (Israel Aircraft Industry) who spoke about her activities in advanced microelectronics technology and an open discussion; much of which centered on general questions by students about the status of new graduate engineers in industry. For further information, please contact the Chapter Chairman: Professor Nathan Croitoru, Tel-Aviv University, Faculty of Engineering, Dept. of Physical Electronics, Tel-Aviv 69978, Israel; TEL: 972-3-6408138; FAX: 972-3-64223508; E-Mail: croitoru@eng.tau.ac.il

### **ED/LEO South Africa Chapter**

— by *Wilhelm Leuschner*

The ED/LEO Chapter in South Africa was established in March 1995. The membership total of only 22, sub-divided as EDS 14 and LEOS 8 (with most members living in the Gauteng province), presents some difficulties in the organization of symposia, workshops, or even technical lectures. One possible way of instantaneously increasing the Chapter membership to a more workable number is to incorporate other IEEE Societies with associated interests into the current chapter. Appropriate societies which are not yet part of any local chapter and represent a substantial number of members in South Africa, are the CAS (Circuits and Systems) and CPMT (Components, Packaging and Manufacturing Technology) societies (CAS 51 and CPMT 8). A questionnaire proposing the formation of a new joint Society Chapter on this basis has been mailed to the members of all four societies in South Africa and responses are awaited. For further information, please contact the Chapter Chairman: Prof. F. Wilhelm Leuschner, Dept. of Electrical & Electronic Engineering, University of Pretoria, South Africa, TEL : (012)-420-2164, FAX: (012)-43-3254, E-Mail: Wilhelm.leuschner@ee.up.ac.za

— *Terry H. Oxley, Editor*

### **ED Yugoslavia Chapter**

— by *Ninoslav Stojadinovic*

The main activity of Yugoslavia IEEE Electron Devices Chapter in 1995 was organization of the 1995 20th International Conference on Microelectronics (MIEL'95), which was held from September 12-14, 1995, at the Faculty of Electronic Engineering, University of Nis, on the occasion of its 35th anniversary. The Conference MIEL'95 was organized in cooperation with the Faculty of Electronic Engineering, University of Nis, and Ei Holding Co.-Nis, under the technical co-sponsorship of the IEEE Electron Devices Society and under

the auspices of Serbian Ministry of Science and Technology.

The Conference MIEL is one of the most outstanding European conferences, 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 from the Third World, to meet in an informal, friendly atmosphere and exchange experiences in the theory and practice of microelectronic devices and circuits. In that respect, the Conference MIEL'95 was no exception, with a truly international attendance that comprised the specialists from 31 countries all over the world. The record number of submitted papers resulted in the largest programme in the history of the MIEL conferences. To accommodate the large number of high-quality papers, in addition to plenary and oral sessions, poster sessions were brought in for the first time at a MIEL conference.

The topics covered by the technical sessions of the Conference MIEL'95 included: semiconductor physics and processing; devices physics and modeling; process, device and circuit simulation; circuit design and application; power devices and circuits; compound semiconductor devices, sensors and transducers; device characterization and reliability; and system design and testing. We had striven, wherever possible, to provide the technical sessions with at least one introductory up-to-date review paper (i.e., invited conference keynote), which was presented by the world leading authority on the particular subject.

Our own expectations, though admittedly high, were exceeded by the record response to the Announcement and Call for Papers. Despite our best effort to accommodate all the high-quality papers, it was inevitable to have quite a lot of submissions turned down. It may be interesting to note that out of 194 submitted papers the Programme Committee selected 151 papers (79 for oral sessions and 72 for poster sessions) for presentation at the conference. These papers, together with 15 invited keynote papers, formed the solid foundation of the Conference MIEL'95.

The evidence of the worldwide recognition Conference MIEL has gained during the past decade is its International Steering Committee, the members of which are the following world leading experts from the

field of microelectronics: H. Iwai (Toshiba, Japan), B. Kang (Beijing Polytechnic University, China), W. Lee (Seoul National University, Korea), C. Ling (National University of Singapore, Singapore), T. Ohmi (Tohoku University, Japan), S. Sze (National Chiao Tung University, Taiwan), H. Tadano (Toyota, Japan), and Y. Yamada (Kyushu Tokai University, Japan) from Asia; G. Baccarani (University of Bologna, Italy), A. Carlosena (University of Navara, Spain), J. Colingue (Catholic University of Louvain, Belgium), H. Detter (Technical University of Vienna, Austria), H. Hartnagel (Technical University of Darmstadt, Germany), R. Popovic (EPFL-INR, Lousanne, Switzerland), P. Rossel (CNRS-LAAS, Toulouse, France), and N. Stojadinovic (University of Nis, Serbia) from Europe; A. Acovic (IBM Microelectronics), R. Agarwal (Wichita State University), R. Jindal (AT&T Bell Labs.), J. Lowell (Advanced Micro Systems), T. Ning (IBM Research Center), A. Shah (Texas Instruments), A. Shibib (AT&T Bell Labs.), and R. Singh (Clemson University) from the USA.

The 1997 21st International Conference on Microelectronics (MIEL'97) will be held at the Faculty of Electronic Engineering, University of Nis, in September 1997. For further information please contact: Prof. Dr. Ninoslav Stojadinovic, MIEL'97, Department of Microelectronics, Faculty of Electronic Engineering, University of Nis, Beogradska 14, 18000 Nis, YUGOSLAVIA, TEL: + 381 18 55 682/46 499, FAX: + 381 18 46180/46 499, E-mail: stojadinovic@efnis.elfak.ni.ac.yu

— *Adrian Veron, Editor*

## **Asia & Pacific (Region10)**

### **Report of the 8th International MicroProcess Conference (MicroProcess '95)**

— by *Kei Horiuchi*

MicroProcess'95 was held at the Sendai International Center in Sendai, Japan, between July 17 and 20, with 292 attendees. 102 papers were presented as regular or poster sessions on lithography and resists, etching, surface reaction, and nanodevices. 16 researchers were invited to give talks on and overviews of current topics in microprocesses. Optical lithography, resolution enhancement, proximity correction, and resist techniques were discussed for quarter micron features. Many papers on high-throughput EB lithography were presented in the special session, arranged in collaboration with the EIPB'95 Commit-



tee. Papers on nanofabrication and nano-devices were presented in the other special session. Papers on X-ray lithography showed possibilities for 0.1 micrometer use. Participants forecasted the dominant technique for lithography by the year 2000 in the rump session. Next year, MPC'96 will be held at the Kitakyushu International Conference Center in Kitakyushu, Japan, from July 8 to 11. For further details, please contact the Secretariat-MicroProcess'96, c/o Business Center for Academic Societies Japan, Japan; FAX: +81-3-5814-5823.

### **Report of the Topical Workshop on III-V Nitrides (TWN'95)**

— by *Sadafumi Yoshida*

TWN'95 was held at Nagoya Congress Center, Nagoya, Japan on September 21-23, 1995, in conjunction with ICSCRM'95, Kyoto, on September 18-21. 114 papers including, 15 invited papers and 8 late news papers, were presented in 9 oral sessions, 1 special session and 1 poster session. 280 people participated from 13 countries and areas. About half of the papers and 40 percent of the participants were from abroad. The papers covered crystal growth of III-V nitrides including: substrate issue and epitaxial growth technologies; characterization, including defects, due to heteroepitaxy; device processing, including etching for laser mirrors; and fabrication and modeling of devices including LEDs and high-power high-frequency FETs. In the afternoon of Sept. 23, a special session, "Prospect of nitrides lasers" was held, and the possibilities of the realization of current-injection lasers using nitrides were discussed eagerly from the viewpoints of crystal qualities and band structures, based on the data for II-VI lasers and the stimulated emission from GaN by optical pumping, and theoretical analysis.

### **Report of the 1995 International Conference on Solid State Devices and Materials (SSDM'95)**

— by *Kenji Taniguchi*

The 1995 International Conference on Solid-State Devices and Materials (SSDM'95) sponsored by the Japan Society of Applied Physics was held from August 21 to 24 in Osaka, Japan. The SSDM'95 constitutes the major forum for discussing research and development work on devices and materials. Despite the current trend towards more special-

ized topical meetings, the strength of SSDM lies in bringing together researchers from different technical areas in order to promote the exchange of knowledge and experience. The number of attendees this year increased to 742, including 168 from overseas. This year's program committee accepted 171 papers for oral presentations, and 159 for poster sessions, including late new papers from 15 countries. In addition, 47 invited papers reviewed special subjects of recent interest. The evening panel sessions provided a more interactive format for discussing key issues and trends in large diameter wafer, ferroelectric thin film, HBT, and planarization technology. Participants and attendees at the lively discussions gained a deeper understanding of these topics.

Three major awards were presented at the plenary session of the SSDM'95. The SSDM award was presented to Prof. H. Yonezu and his co-authors for their contribution to the clarification of the degradation mechanism of semiconductor lasers. The SSDM award was presented to Dr. K. Kurishima. The SSDM young researcher award was given to Dr. J. Shirakashi. Next year's SSDM is scheduled to be held in Yokohama from August 26 to 29.

### **Report of the 1995 International Conference on Silicon Carbide and Related Materials - ICSCRM-95**

— by *Hiroyuki Matsunami*

ICSCRM'95 was held at Kyoto Research Park on September 18-21. Up-to-date research work in the attractive fields of SiC, III-V nitrides and related wide-bandgap semiconductors were gathered to recognize state-of-the-art science and engineering. 308 excellent papers, including 15 invited talks and 7 late news papers were presented, and more than 400 participants from 14 different countries joined and had fruitful discussions. It should be noted that about half of the attendees were from overseas, which shows not only the high potential in this field in Japan, but also the real international exchange of scientific information. Well-organized invited talks stressed the important subjects of the present research and future prospects in fundamental physics, crystal growth, control of material properties and novel device applications. Outstanding results in SiC bulk crystal growth with large (2 - 3 inches) diameter will promote the rapid progress of device applications. Experimental realizations of innovative devices such as high-power and high-frequency devices and

bright blue-green light emitting diodes, have attracted remarkable attentions. Successful results of this conference show that the practical applications of wide-bandgap semiconductors will be developed widely and substantially, and that requests for basic research work will continue to increase in the future.

— *Hiroshi Iwai, Editor*

### **ED Hong Kong Chapter**

— by *Man Wong*

In the second year of its existence, the Chapter matured in its operations without diminished enthusiasm. It sustained its strong momentum of bringing current and relevant technical programs to the community, through either sponsoring or organizing seminars and meetings. Such events included 6 technical seminars, one dinner gathering for Chapter members featuring an invited talk given by Professor Hoi Kwok on "Display Technologies," and one seminar series in June with a roster of internationally renowned speakers from both the industry and academia. The showcase event of the Chapter, the annual Hong Kong Electron Devices Meeting, was successfully held in July under the able leadership of the General Chairman, Professor Peter Lai of the University of Hong Kong.

This year also saw the Region 10 Technical Conference coming to Hong Kong. The theme of the Conference this year was "Microelectronics Asia Pacific 2000", matching perfectly the interests and talents of the members of the Chapter. Many participated in the Technical Program Committee; many also contributed to and presented high quality papers in the Conference.

This report also marks the completion of a year of my service as Chairman of the Hong Kong Chapter. I'd like to thank all the volunteers who assisted in the running of the Chapter and related events. It has been a memorable year, the financial state of the Chapter is healthy, but most important of all, it has been fun!

The Nomination Committee of the Chapter has submitted the following candidates for confirmation to serve as the Chapter Executive Officers for the year 95/96:

Chairman: Professor Charles Surya, HKPU

Vice Chairman: Professor Vincent Poon, HKUST

Secretary: Professor Peter Lai, HKU

Treasurer: Professor Kam T. Chan, CUHK

— *Cuong T. Nguyen, Editor*



1995 Semiconductor Manufacturing Technology Workshop Executive committee members, organization committee members, and keynote speakers.

### Report of the 1995 Semiconductor Manufacturing Technology Workshop

— by C.M. Chang

The 1995 Semiconductor Manufacturing Technology Workshop, organized by IEEE EDS Taipei Chapter and technically co-sponsored by IEEE EDS, was held on October 19-20, 1995 in Hsinchu, Taiwan, R.O.C. The Workshop attracted more than 300 attendees. The Workshop became headline news of many newspapers and TV stations. There were four worldwide distinguished keynote speakers this year: Dr. C.S. Hsu - Senior VP of Winbond, Mr. Koichi Nagasawa from Mitsubishi of Japan; Mr. Keiichi Watanabe - Site General Manager of IBM-Yasu; and Prof. Robert C. Leachman of UC Berkeley. In addition, 13 papers from local industry, universities and research labs were pre-

sented on various perspectives of yield enhancement, process integration, scheduling, information system, equipment technology, and water management. A special panel discussion on "Human Resource Challenges in Taiwan's IC Industry" was held as the final part of this workshop. As manufacturing technology continues to be the critical success factor in the semiconductor industry, the perspectives, ideas, and experiences discussed by the speakers were valuable to the workshop participants. This workshop will be held again in 1996 in Taiwan.

### ED Beijing Chapter

— by Han C. Hu

The 7th National Millimeter Wave, Sub-Millimeter Wave Conference, co-sponsored by CIE (Chinese Institute of Electronics) and ED Beijing Chapter was

held on October 6-9, 1995 in Fu-Zhou, China. This conference had 98 papers, reflecting the research advances in sources, measurements, wave propagation, far-infrared lasers, and system integration.

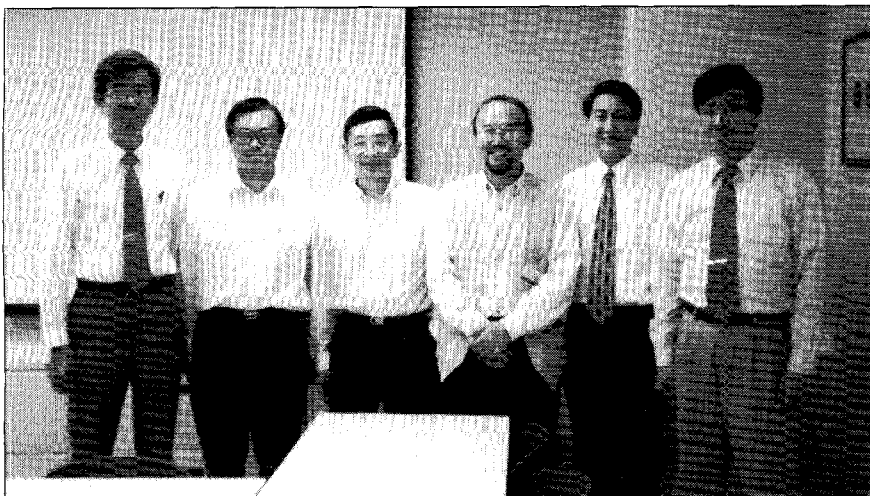
ICMWFST'96, 4th International Conference on Millimeter Wave and Far-Infrared Science and Technology, sponsored by CIE, IEEE Beijing Section, Texas A&M University, National Committee for URSI and technically co-sponsored by IEEE ED Society, will be held in Beijing, China from August 12 to 15, 1996.

ICSICT'95 (4th International Symposium on Solid-State and Integrated-circuit Technology) was held at the Continental Grand Hotel, Beijing, China on October 24-28, 1995. 232 papers from China, Japan, USA, Europe and Taiwan were presented. There were 200 attendees from 22 countries. Three invited keynote papers concerning the development of VLSI in China, device fundamental limit and molecular electronics were presented by Xide Xie (Fudan University), L. Terman (IBM) and M. Pilkuhn (University of Stuttgart), respectively. In addition, there were two evening panels on the subjects of "Factors Contributing to the Rapid Growth of Microelectronics in Asia", and "Silicon Technologies to 2000 and Beyond". The next conference will be held in 1998.

On October 26, 1995, the ED Beijing Chapter arranged the visit of Dr. L. Terman and Dr. T. Ning of IBM to Institute of Electronics, Chinese Academy of Science. As a part of distinguished lecturer series, Dr. Terman presented a talk on "Limits - some are more fundamental to others", and Dr. Ning's talk was on "Tradeoffs between SiGe and GaAs Bipolar ICs". Following the seminar, Dr. Terman and Dr. Ning discussed a number of issues concerning the nomination of Chinese members for IEEE Fellow grade, technical co-sponsorship of ICMWFST'96 and speedy acquisition of the recent IEDM Digest.

The First National Display Technology Conference, co-sponsored by CIE, SID Beijing Chapter, ED Beijing Chapter and Chinese Vacuum Electronics Association, was held from Nov. 29 to Dec. 2, 1995, at Nankai University, Tianjing, China. 82 papers in the areas of CRT, FPD, and Display Application were presented from both sides of Taiwan Strait, representing SID Taipei and SID Beijing Chapters. The 1997 conference will be held in Xi'an, China.

— S. C. Sun, Editor



Prof. Cary Y. Yang, EDS Sections/Chapters Chair visited Taipei Chapter on November 4, 1995. From left: C.P. Lee, S.C. Sun, C.Y. Lu, C.Y. Yang, C.M. Chang, and J.M. Sung.

## AdCom Meeting

(continued from page 2)

by these changes.

- Acknowledgment was made of Dexter Johnston's contributions as EDS President for the last two years. During this period, EDS doubled its number of chapters, tripling those in Region 8. The student mentoring program (STAR), groundwork for electronic publishing, strong emergence of the globalization concept, and increasing the number of women involved with the society and its activities all happened during Dexter's watch. The Society has been stronger financially than it ever has been. We thank him for the overall professional way in which he has managed the society in the last two years. He was presented with two certificates: one in recognition of his service as an elected AdCom member, one in recognition of his presidency, and he was presented with a gift as a token of our appreciation. We are grateful, Dexter!

### Region 10 Globalization Plan (Asia & Pacific)

Six globalization trips were made in 1995, at a total cost of \$17.8K. There are now 1,896 members of EDS in Region 10, with 993 in Japan. Region 10 therefore constitutes 19% of EDS membership. The ED Hong Kong chapter was successfully launched. Taiwan's membership is very strong. South Korea has 333 members which could easily grow. There is a possibility of the IEICE becoming a "sister society". China is developing technologically, and represents a significant long-term investment for IEEE/EDS.

The complexity and uniqueness of this region are enormous. It is a huge geographical area. We believe that growth will be slow, and that both membership and travel will be expensive, but the potential gain for IEEE and EDS is very significant.

### Region 8 Globalization Plan (Europe, Middle East & Africa)

There has been a great deal of success in forming new chapters, with a total of 6 new chapters in Eastern Europe: West Ukraine, St. Petersburg, Lithuania, Bulgaria, Saratov-Penza, and Moscow. The first phase of the Library Project, to provide IEEE periodicals to 15 libraries in Eastern Europe, has been completed.

The EDS Region 8 Chapters Meeting in the Hague on September 24th was a great success. Twenty-three of a total of 25 EDS Region 8 chapters were represented. Gratitude was expressed for help in the formation of chapters and libraries.

A motion to appropriate funds for continued globalization in Regions 8 and 10 passed unanimously.

### New Concept - 'Permanent' EDS Membership

The possibility of offering EDS members the option of obtaining a 'permanent' EDS membership was proposed by Dexter Johnston. After much discussion, a motion was unanimously approved to offer EDS member's a 'permanent' EDS membership at a 'one-time' payment of \$25, effective for the 1997 membership cycle (starting September, 1996).

### Sections/Chapters

Cary Yang reported that there is now a total of 75 chapters, which is an increase from 45 three years ago. This represents phenomenal growth! Last year, requests for chapter funding were all approved, but generally limited to about \$500.

### Educational Activities

Jerry Woodall acknowledged the enthusiastic encouragement he received about two years ago from Mike Adler to build a Distinguished Lecturer (DL) Program. There was a total of 34 lectures during the past year, with only four requests for funding. The total cost to EDS for 1995 was only \$1,860, for an average of \$55/lecture.

The DL Program has been especially useful for globalization. In fact, the majority of Program activity has been generated by the EDS chapters outside the US. It was discussed that EDS should try to enhance the Program to meet the needs of the chapters as well as leverage it with other Society activities. One suggestion was to increase the number of lecturers residing outside the US, as requested by our non-US chapters. Another idea was to use the DL program for "mini-colloquia", i.e., have several DLs focused on a single topic.

### Publications

Steve Hillenius led a discussion of the Science Citation Index (SCI) impact factor for EDS publications. The SCI impact factor is

defined as the following ratio: no. of citations for a given article/no. of articles in the journal. Thus, the impact factor has the effect of normalizing out the size or readership of the journal in which the article appears. Currently, the *Transactions on Electron Devices* (T-ED) has an impact factor that ranks it seventh out of 130. Note that it had slipped from no. 5 in 1992. Similarly, *Electron Device Letters* currently ranks eighth, but had been third in 1992. These relatively unimportant decreases in ranking are probably a result of the appearance of a number of new journals.

### Technical Meetings

Bruce Griffing reported that EDS is the financial sponsor or co-sponsor of 32 technical meetings. EDS provides non-financial support in the form of technical co-sponsorship and cooperation for another 24 and 35 meetings, respectively. In total, EDS is involved in 91 technical meetings. EDS technical meeting activity is therefore very alive and well.

The EDS Meetings "Best Practices" Workshop was again scheduled for that evening, with 55 people signed up.

A request was made by Prof. Kunio Tada to increase the level of support for the Solid-State Devices and Material Conference (SSDM) to technical co-sponsorship. SSDM is described as a Region 10 equivalent of IEDM. The motion carried unanimously.

A similar motion was made to approve technical co-sponsorship, not to exceed 10%, for the IEEE Intelligent Transportation Systems Conference (ITSC). This motion also carried unanimously.

### Awards

Two important awards were announced: Lew Terman will receive the 1995 EDS Distinguished Service Award, and Prof. Martin Green won the 1995 J.J. Ebers Award for sustained leadership in Si photovoltaic solar energy conversion.

### EDS Membership Directory

The possibility of producing an EDS Membership Directory was discussed at length. It was moved to produce such a directory, to distribute it free to EDS members in its first year (1997), but to offer it to EDS members for \$10/copy after the first year. The motion carried, so look forward to receiving an EDS Membership Directory in 1997.

# EDS Meetings Calendar

(As of February 22, 1996)

<u>DATE</u>	<u>NAME/LOCATION</u>	<u>CONTACT/ABSTRACT DEADLINE</u>
<b>1996</b>		
April 14-19	<b>1996 TRANS BLACK SEA REGION SYMPOSIUM ON APPLIED ELECTROMAGNETISM</b> /Metsovo, North Greece	Nikolaos K. Uzunoglu - Deadline: Past Due Tel: 30-1-3816908 Fax: 30-1-3647794
April 21-25	<b>1996 IEEE INTERNATIONAL CONFERENCE ON INDIUM PHOSPHIDE AND RELATED MATERIALS</b> /Conference Center "Stadtgarten", Schwabisch Gmund, Germany	Volker Schanz - Deadline: Past Due Tel: 49-69-6308-360 Fax: 49-69-6312-925
April 29-30	<b>1996 AGIL-CONFERENCE OF THE ISRAEL MATERIALS UNION</b> / Carmel Hotel, Natanya, Israel	Gady Galon - Deadline: Past Due Tel: 972-3-646-0329 Fax: 972-3-646-0767
April 29-May 3	<b>1996 IEEE INTERNATIONAL RELIABILITY PHYSICS SYMPOSIUM</b> / Wyndham Anatole Hotel, Dallas, TX	Roy Walker - Deadline: Past Due Tel: (315) 339-3971 Fax: (315) 336-9134
Apr. 29 - May 3	<b>1996 IEEE SEMICONDUCTING AND SEMI-INSULATING MATERIALS CONFERENCE</b> /Hotel Atria, Toulouse, France	Josiane Sutra - Deadline: Past Due Tel: 33-62-25-78-00 Fax: 33-62-25-79-99
May 5-8	<b>1996 IEEE CUSTOM INTEGRATED CIRCUITS CONFERENCE</b> / Town & Country Hotel, San Diego, CA	Melissa Widerkehr - Deadline: Past Due Tel: (301) 527-0902 Fax: (301) 527-0994
May 13-14	<b>1996 INTERNATIONAL SYMPOSIUM ON PLASMA PROCESS INDUCED DAMAGE</b> /Westin Hotel, Santa Clara, CA	Charles K.P. Cheung - Deadline: Past Due Tel: (908) 582-6483 Fax: (908) 582-5980
May 13-17	<b>1996 IEEE PHOTOVOLTAIC SPECIALISTS CONFERENCE</b> /Hyatt Regency Crystal City Hotel, Arlington, VA	Eldon C. Boes - Deadline: Past Due Tel: (202) 651-7500 Fax: (202) 651-7502
May 20-23	<b>1996 IEEE INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS</b> /Hyatt Regency Maui Hotel, Maui, HI	M. Ayman Shibib - Deadline: Past Due Tel: (610) 939-6576 Fax: (610) 939-6795
May 27-31	<b>1996 ELECTROMAGNETICS CONFERENCE</b> /Albuquerque Convention Center, Albuquerque, NM	Chris W. Jones - Deadline: Past Due Tel: (505) 243-0681 Fax: (505) 243-0683
May 28-31	<b>1996 INTERNATIONAL CONFERENCE ON ELECTRON, ION AND PHOTON BEAMS</b> /The Atlanta Marriott, Atlanta, GA	Stella Pang - Deadline: Past Due Tel: (313) 936-2962 Fax: (313) 763-9324
June 5-7	<b>1996 IEEE EUROPEAN GALLIUM ARSENIDE APPLICATIONS SYMPOSIUM</b> / Conservatoire National Des Arts Et Metiers, Paris, France	Christian Rumelhard - Deadline: Past Due Tel: 33-1-40-27-21-79 Fax: 33-1-40-27-24-81
June 9	<b>1996 IEEE INTERNATIONAL WORKSHOP ON STATISTICAL METROLOGY</b> /Hilton Hawaiian Village Hotel, Honolulu, HI	Harold Hosack - Deadline: Past Due Tel: (214) 995-4942 Fax: (214) 995-1724
June 9-10	<b>1996 IEEE SILICON NANOELECTRONICS WORKSHOP</b> /Hilton Hawaiian Village Hotel, Honolulu, HI	Mark A. Reed - Deadline: Past Due Tel: (203) 432-4306 - Fax: (203) 432-7769
June 9-14	<b>1996 INTERNATIONAL HIGH TEMPERATURE ELECTRONICS CONFERENCE</b> / Albuquerque Marriott Hotel, Albuquerque, NM	Debbie Manchand - Deadline: Past Due Tel: (505) 266-5678 Fax: (505) 255-4284
June 11-13	<b>1996 IEEE SYMPOSIUM ON VLSI TECHNOLOGY</b> /Hilton Hawaiian Village Hotel, Honolulu, HI	Richard A. Chapman - Deadline: Past Due Tel: (214) 995-2366 Fax: (214) 995-1916
June 13-15	<b>1996 IEEE SYMPOSIUM ON VLSI CIRCUITS</b> /Hilton Hawaiian Village Hotel, Honolulu, HI	Kevin J. O'Connor - Deadline: Past Due Tel: (908) 582-3636 Fax: (908) 582-6000
June 17-18	<b>1996 IEEE MICROWAVE AND MILLIMETER-WAVE MONOLITHIC CIRCUITS SYMPOSIUM</b> /Mascone Convention Center, San Francisco, CA	Mahesh Kumar - Deadline: Past Due Tel: (516) 574-3295 Fax: (516) 574-1244
June 17-21	<b>1996 INTERNATIONAL CONFERENCE ON ION IMPLANTATION TECHNOLOGY</b> /The Stouffer Renaissance Austin Hotel, Austin, TX	Larry A. Larson - Deadline: Past Due Tel: (512) 356-7145 Fax: (512) 356-3083
June 24-26	<b>1996 IEEE DEVICE RESEARCH CONFERENCE</b> /University of California, Santa Barbara, CA	Peter M. Asbeck - Deadline: 3/1/96 Tel: (619) 534-6713 Fax: (619) 534-0556
June 24-27	<b>1996 POWER MODULATOR SYMPOSIUM</b> /The Boca Raton Resort & Club, Boca Raton, FL	Janice D. Brooks - Deadline: Past Due Tel: (703) 413-1282 Fax: (703) 413-1315
June 26-28	<b>1996 EUROPEAN WORKSHOP ON LOW TEMPERATURE ELECTRONICS</b> /IMEC, Leuven, Belgium	Cor L. Claeys - Deadline: Past Due Tel: 32-16-2813-28 Fax: 32-16-2812-14

<b>DATE</b>	<b>NAME/LOCATION</b>	<b>CONTACT - ABSTRACT DEADLINE</b>
June 29	<b>1996 HONG KONG ELECTRON DEVICES MEETING</b> /The Hong Kong Polytechnic University, Hung Hom, Hong Kong	Peter P.T. Lai - Deadline: 3/1/96 Tel: 852-2859-2691 Fax: 852-2559-8738
July 7-12	<b>1996 IEEE INTERNATIONAL VACUUM MICROELECTRONICS CONFERENCE</b> /St. Petersburg Bonch-Bruевич State University of Telecommunications, St. Petersburg, Russia	Henry F. Gray - Deadline: 3/1/96 Tel: (202) 767-2812 Fax: (202) 767-0546
July 8-11	<b>1996 INTERNATIONAL MICROPROCESS CONFERENCE</b> /Kitakyushu International Conference Center, Kitakyushu, Japan	Secretariat-MicroProcess - Deadline: 3/15/96 Tel: 81-3-5814-5800 Fax: 81-3-5814-5823
July 16-21	<b>1996 INTERNATIONAL CONFERENCE ON THE NUMERICAL ANALYSIS OF SEMICONDUCTOR DEVICES AND INTEGRATED CIRCUITS</b> /King David Hotel, Jerusalem, Israel	Paulene McKeever - Deadline: Not Available Tel: 353-1-6797655 Fax: 353-1-6792469
July 23-30	<b>1996 INTERNATIONAL WORKSHOP ON ELECTROMAGNETICS OF CHIRAL, BI-ISOTROPIC, AND BI-ANISOTROPIC MEDIA</b> /River Boat from Moscow to St. Petersburg, Russia	Ari Sihvola - Deadline: Past Due Tel: 358-0-451-2261 Fax: 358-0-451-2267
July 28-Aug. 2	<b>1996 INTERNATIONAL CONFERENCE ON SCIENCE AND TECHNOLOGY OF SYNTHETIC METALS</b> /Cliff Lodge Hotel, Snowbird, UT	Z. Voly Vardeny - Deadline: Past Due Tel: (801) 581-8372 Fax: (801) 581-4801
July 29-31	<b>1996 INTERNATIONAL SYMPOSIUM ON ATOMIC LAYER EPITAXY AND RELATED SURFACE PROCESSES</b> /Johannes Kepler University, Linz, Austria	Helmur Sitter - Deadline: Not Available Tel: 43-732-2468-9623 Fax: 43-732-2468-650
Aug. 5-9	<b>1996 INTERNATIONAL CONFERENCE ON MOLECULAR BEAM EPITAXY</b> /Pepperdine University, Malibu, CA	David Grider - Deadline: 3/15/96 Tel: (310) 317-5007 Fax: (310) 317-5450
Aug. 11-16	<b>1996 IEEE INTERSOCIETY ENERGY CONVERSION ENGINEERING CONFERENCE</b> /Omni Shoreham Hotel, Washington, DC	Eleanor B. Dicks - Deadline: Past Due Tel: (301) 946-1586 Fax: (301) 946-4374
Aug. 12-15	<b>1996 INTERNATIONAL CONFERENCE ON MILLIMETER-WAVE AND FAR-INFRARED SCIENCE AND TECHNOLOGY</b> /Xiang Shan Hotel, Beijing, China	Kai Chang - Deadline: Past Due Tel: (409) 845-5285 Fax: (409) 845-6259
Aug. 19-21	<b>1996 TOPICAL WORKSHOP ON HETEROSTRUCTURE MICROELECTRONICS</b> /Sapporo Theme International Hotel, Sapporo, Japan	David Grider - Deadline: 4/8/96 Tel: (310) 317-5007 Fax: (310) 317-5450
Aug. 26-29	<b>1996 INTERNATIONAL CONFERENCE ON SOLID-STATE DEVICES AND MATERIALS</b> /Pacifico Yokohama, Yokohama, Japan	Secretariat of SSDM'96 - Deadline: 4/1/96 Tel: 81-3-5814-5800 Fax: 81-3-5814-5823
Aug. 29-31	<b>1996 IEEE INTERNATIONAL CONFERENCE ON ADVANCED TECHNOLOGIES</b> /Swiss Federal Institute of Technology, Lausanne, Switzerland	Jacques Kowalczyk - Deadline: 3/1/96 Tel: 41-21-693-6981 Fax: 41-21-693-4663
Sept. 2-4	<b>1996 IEEE INTERNATIONAL CONFERENCE ON SIMULATION OF SEMICONDUCTOR PROCESSES AND DEVICES</b> /Toyo University Bunkyo-ku, Tokyo, Japan	Akira Yoshii - Deadline: 4/1/96 Tel: 81-462-40-2140 Fax: 81-462-40-4306
Sept. 9-11	<b>1996 EUROPEAN SOLID-STATE DEVICE RESEARCH CONFERENCE</b> /Bologna Congress Center, Bologna, Italy	Giorgio Baccarani - Deadline: 3/22/96 Tel: 39-51-644-3012 Fax: 39-51-644-3007
Sept. 10-12	<b>1996 ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE SYMPOSIUM</b> /Buena Vista Palace Hotel, Lake Buena Vista, FL	ESD Association Inc. - Deadline: Past Due Tel: (315) 339-6937 Fax: (315) 339-6793
Sept. 10-13	<b>1996 INTERNATIONAL CONFERENCE ON MATHEMATICAL METHODS IN ELECTROMAGNETIC THEORY</b> /University Lviv Polytechnic, Lviv, Ukraine	Oleg Ovsyannikov - Deadline: 5/16/96 Tel: 380 (0322) 654412 Fax: 380 (0322) 643427
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Oct. 8-11	<b>1996 EUROPEAN SYMPOSIUM ON RELIABILITY OF ELECTRON DEVICES, FAILURE PHYSICS AND ANALYSIS</b> /Best Western Dish Hotel, Enschede, The Netherlands	Herman E. Maes - Deadline: 3/15/96 Tel: 32-16-281-283 Fax: 32-16-281-501
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Oct. 22-23	<b>1996 SEMICONDUCTOR MANUFACTURING TECHNOLOGY WORKSHOP</b> /Taiwan Semiconductor Manufacturing Company Limited (TSMC), Hsinchu, Taiwan	J.H. Tzeng - Deadline: Not Available Tel: 886-35-780221 Fax: 886-35-781546
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Dec. 16-20	<b>1996 INTERNATIONAL ELECTRON DEVICES AND MATERIALS SYMPOSIUM</b> /National Tsing Hua University, Hsinchu, Taiwan, ROC	Lih J. Chen - Deadline: 6/15/96 Tel: 886-35-718328 Fax: 886-35-718328

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The IEEE Electron Devices Society invites the submission of nominations for the 1996 J.J. Ebers Award. This award is presented annually by EDS to honor an individual(s) who has made either a single or a series of contributions of recognized sci-

entific, economic, or social significance to the broad field of electron devices. The recipient(s) is awarded a certificate and a check for \$2,000, presented at the International Electron Devices Meeting (IEDM).

Nomination forms can be requested

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