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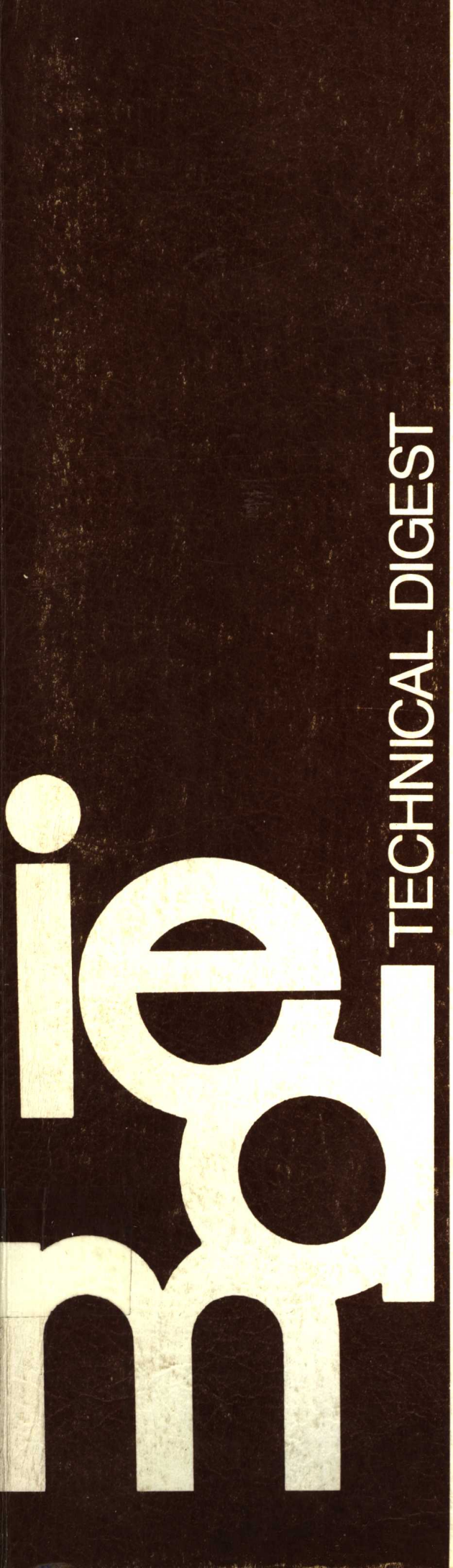

international ELECTRON DEVICES meeting

1998

SAN FRANCISCO, CA
DECEMBER 6–9, 1998

Sponsored by Electron Devices Society of IEEE

1998 International Electron Devices Meeting
TECHNICAL DIGEST

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WELCOME FROM THE GENERAL CHAIR

The Conference Committee and I welcome you to the 1998 IEEE International Electron Devices Meeting. This year the conference returns to San Francisco and continues a 44-year tradition as the premier forum for the presentation of the latest research and development in the area of electron devices and their applications. The strong international nature of our industry and the broad range of topics are evident with invited speakers and contributed papers from major semiconductor centers from around the world. Over 660 abstracts were submitted from 30 countries. The total number of accepted abstracts was 240.

Pierre Woerlee
General Chair

This year we are introducing a new feature to the IEDM. Two special sessions will feature invited speakers and regular papers on device manufacturing issues. We are continuing two features to improve accessibility to the information in the IEDM abstracts. We have included 50 word abstracts on the IEDM home page which are available now (please visit our site at http://www.ieee.org/conference/iedm). We are also providing the digest in a CD-ROM version that will be distributed along with the technical digest.

Two short courses are scheduled for Sunday. These are designed for broad appeal to the IEDM participants including those unfamiliar with the topics. The courses are entitled "Reliability for Logic and Memory Technologies" and "Next Generation TCAD: Models and Methods." These courses have been organized and will be presented by active researchers who are experts in these fields.

Gary Bronner
Technical Program Chair

The plenary talks on Monday will feature presentations on semiconductor process equipment, system on a chip and electronics for communications. Speakers from North America, Europe and Asia will be featured.

The IEDM Luncheon speaker this year will be Dr. Yoshio Nishi, senior vice-president and director of research and development of Texas Instruments. He will be speaking on "Technology Development Trends in the Next Millennium." This talk will address the trends in semiconductor technology development. I recommend that you not miss it.

On Tuesday night, panel sessions are planned on two important and potentially controversial topics: "Do Copper and Low-K Solve All of Our Interconnect Related Problems?" and "Front-End Processing: Scaling Challenges for Nanometer Transistors."

On behalf of the IEEE Electron Devices Society, which sponsors the IEDM, Gary Bronner, Technical Program Chair and Mark Law, Technical Program Vice Chair, I wish to express my sincere appreciation and congratulations to the members of the IEDM committee for the outstanding job they have done in planning and organizing the 1998 meeting. The authors are to be commended for their efforts in preparing and presenting the high-quality papers that form the foundation of the IEDM. It is with great pleasure that I extend a warm welcome to them and to all the attendees of the 1998 IEEE International Electron Devices Meeting.

Mark Law
Technical Program Vice Chair

AWARD PRESENTATIONS

PLENARY SESSION

Monday, December 7

1997 Roger A. Haken Best Student Paper Award
To: Felix Mayer, ETH Hoenggerberg, Zurich, Switzerland
For the paper entitled: Single-Chip CMOS Anemometer

Paul Rappaport Award
To: Isabel Y. Yang, Carlin J. Vieri, Anantha P. Chandrakasan and Dimitri A. Antoniadis
For the paper entitled: Back-Gated CMOS on SOIAS for Dynamic Threshold Voltage Control

EDS Chapter of the Year Award
To: ED/MTT India Chapter
ED/CPMT/R Singapore Chapter
"To an EDS chapter based on the quantity and quality of the activities and programs implemented by the chapter."

EDS Distinguished Service Award
To: W. Dexter Johnston, Jr.
"To recognize and honor outstanding service to the Electron Devices Society"

J. J. Ebers Award
To: B. Jayant Baliga
"For fundamental and sustained contributions to power semiconductors"

1998 IEEE Jack A. Morton Award
To: Isamu Akasaki, Meijo University, Nagoya, Japan and Shuji Nakamura, Nichia Chemical Industries, Ltd., Tokushima, Japan
"For contributions in the field of group-III nitride materials and devices"

IEDM LUNCHEON
Tuesday, December 8

1998 IEEE Cledo Brunetti Award
To: Roger T. Howe, University of California, Berkeley, CA and Richard S. Muller, University of California, Berkeley, CA
"For leadership and pioneering contributions to the field of microelectromechanical systems"

1998 IEEE David Sarnoff Award
To: Dr. Tatsuo Izawa, Nippon Telegraph and Telephone Corporation, Kanagawa, Japan
"For contributions to vapor phase axial deposition for optical fiber fabrication"

LUNCHEON PRESENTATION

"Technology Development Trends in the Next Millennium", a presentation by Dr. Yoshio Nishi, Texas Instruments

CONFERENCE HIGHLIGHTS

Date	Time	Room	Event
12/6	9:00 a.m. – 5:00 p.m.	Cont'l Ballrooms 1-5 and 6-9	Short Courses
12/7	9:00 a.m. – 12:00 p.m.	Cont'l Ballroom 1-9	Plenary Session
12/7	6:00 p.m. – 7:30 p.m.	Grand Ballroom B	Reception
12/8	12:20 p.m. – 2:00 p.m.	Grand Ballroom B	Luncheon
12/9	8:00 p.m. – 10:00 p.m.	Continental Ballroom 1-4 and 6-9	Panel Sessions

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Seated from left to right: Sophie Verdonckt Vandebroek, Publicity Chair; Werner Weber, European Arrangements Co-Chair; Gary Bronner, Technical Program Chair; Pierre Woerlee, General Chair; Mark Law, Technical Program Vice Chair; Judy Hoyt, Short Course Chair; First row standing from left to right: H.S. Philip Wong, Publications Chair; Melissa Widerkehr, Conference Manager; Takemitsu Kunio, Asian Arrangements Co-Chair; Jon Abrokwah, Subcommittee Chair, Quantum Electronics and Compound Semiconductors; C. Andre T. Salama, Subcommittee Chair, Solid State Devices; Akintunde I. Akinwande, Subcommittee Chair, Detectors, Sensors and Displays; Shuji Ikeda, Special Session Chair; Second row standing from left to right: Shih-Wei Sun, Asian Arrangements Co-Chair; Morgan Thoma, Publicity Vice Chair; T.C. Chen, Subcommittee Chair, Integrated Circuits; Duane Boning, Subcommittee Chair, Modeling and Simulation; Herman Maes, Subcommittee Chair, CMOS Devices and Reliability; D.B.M. Klaassen, Short Course Vice Chair; Tadashi Nishimura, Subcommittee Chair, Device Interconnect Technology; Phyllis Mahoney, Conference Manager

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