

international  
**ELECTRON  
DEVICES**  
meeting

**1987**

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TECHNICAL DIGEST



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# 1987 International Electron Devices Meeting TECHNICAL DIGEST

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## OVERVIEW FROM THE GENERAL CHAIRMAN

The conference committee and I welcome you to the 1987 IEEE International Electron Devices Meeting. This year the conference returns to Washington, D.C. and continues a 32-year tradition as a forum for the presentation of the latest research and development in the area of electron devices and their applications. The technical agenda will focus on advances in the areas of solid-state devices, device technology, integrated circuits, quantum electronics and compound semiconductor devices, modeling and simulation, detectors, sensors and displays, and electron tubes.

The strong international nature of the IEDM is reflected in this year's exciting program which contains papers selected from 529 abstracts that were submitted from 22 countries around the world. The 1987 IEDM will open with a plenary session highlighted by three excellent presentations describing the prospects for applying high-temperature super conductivity to electronics, epitaxial gallium arsenide-on-silicon technology, and analog ICs in the VLSI digital era. Additionally, the agenda will be enriched by four stimulating panel discussions: "Application Dependency of Technology Choice—CMOS, Bipolar, BiCMOS", "Advanced IC Interconnect Technology", "Gallium Arsenide on Silicon", and "Integrating Sensors and Electronics: Where to Draw the Line?".

On Sunday, the 1987 IEDM will offer two short courses specially designed to enhance one's technical vitality. The first course is "BiCMOS Technology and Design Techniques", and the second is "Gallium Arsenide Monolithic Microwave ICs." These courses are planned to broadly appeal to IEDM participants including both those unfamiliar with the topic areas and those who have worked in these fields.

The Tuesday luncheon will feature Professor John Hopfield of the California Institute of Technology. His talk will explain some basic concepts in neural networks and their potential analogues in electronics.

It will be our pleasure to join the IEEE in presenting the Clelio Brunetti Award to Dr. Michael Hatzakis of IBM, the Jack A. Morton Award to Dr. Dennis D. Buss of Analog Devices, Inc. and Drs. Richard A. Chapman and Michael A. Kinch of Texas Instruments, and the David Sarnoff Award to Drs. Frank F. Fang and Alan B. Fowler of IBM.

On behalf of the IEEE Electron Devices Society, which sponsors the IEDM and Bruce Griffing, the technical program chairman, I wish to express my sincere appreciation and congratulations to the members of the Conference Committee for the outstanding job they have done in planning and organizing the 1987 meeting. The authors are to be commended for their efforts in preparing and presenting the high-quality papers that form the foundation of this endeavor. It is with great pleasure that I extend a hearty welcome to them and to all of the attendees of the 1987 IEEE International Electron Devices Meeting.



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