

1983 IEEE - SISC PRELIMINARY PROGRAM

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THURSDAY MORNING, DECEMBER 1, 1983

Session I: Electronic Properties of Interfaces

Chairmen: B. E. Deal, Fairchild; D. R. Young, IBM,
Max J. Schultz, Erlangen

- 1.1 (Invited) MOS Measurements: A Historical Perspective and the Current State of the Art, E. H. Nicollian, University of N. Carolina, Charlotte
- 1.2 The Pb Center and Electronic Traps at the SiO₂-Si Interface: Annealing Kinetics and Bandgap Energy Spectrum, P. J. Caplan, G. J. Gerardi, M. E. Rueckel, E. H. Poindexter, ERADCOM, Fort Monmouth; N. M. Johnson, and D. K. Biegelsen, Xerox, Palo Alto
- 1.3 Interface Trapping for 1 μ m CMOS Devices, R. Green and K. Y. Yu, INTEL, Aloha, Oregon
- 1.4 Kinetics of As-Grown Fixed Oxide Charge (N_f) Generation at the Si-SiO₂ Interface During Thermal Oxidation of Silicon, A. I. Akinwande*, C. P. Ho, and J. D. Plummer, Integrated Circuits Lab. Stanford University, Stanford
- 1.5 Annealing of Oxide Fixed Charges in Scaled Polysilicon Gate MOS Structures, D. B. Kao*, K. C. Saraswat and J. P. McVittie, Integrated Circuit Laboratory, Stanford University, Stanford
- 1.6 Silicon-Silicon Grain Boundary Interfaces, H. C. Card, A. W. De Groot, G. C. McGonigal, J. G. Shaw and D. J. Thomson; Materials and Devices Research Lab, University of Manitoba, Canada

*Student participation partially supported by Conference

THURSDAY EVENING, DECEMBER 1, 1983

Session II: Interface Structure and Chemistry

Chairmen: T. W. Sigmon, Stanford University, D. E. Aspnes, Bell Labs,
E. A. Irene, University of North Carolina, Chapel Hill

- 2.1 (Invited) High Resolution Electron Microscopy of Interfaces in Semiconductors, R. Sinclair, Stanford University
- 2.2 (Invited) SIMS Characterization of Silicon Device Materials, C. W. Magee, RCA
- 2.3 The Chemical Structure and Reactivity of the Transitional Region of the Si/SiO₂ Interface as Determined by High Resolution X-Ray and Synchrotron Radiation-Induced Photoemission, F. J. Grunthner, P. J. Grunthner and M. Hecht, Jet Propulsion Lab, Caltech, Pasadena
- 2.4 Hydrogen Migration under Avalanche Injection of Electrons in Si Metal-Oxide-Semiconductor Capacitors, R. Gale, F. J. Feigl, Lehigh University, PA., C. W. Magee, RCA, Princeton, D. R. Young IBM, Yorktown Heights
- 2.5 A Noninvasive Spectroscopic Study of the Al/SiO₂ Interface, M. H. Hecht, R. P. Vasquez, F. J. Grunthner, Jet Propulsion Lab. Caltech, Pasadena

FRIDAY MORNING, DECEMBER 2, 1983

Session III: Advanced Device Structures

Chairmen: J. Harris, Stanford University, Ranjeet Pancholy, Rockwell,
J. D. Plummer, Stanford University

- 3.1 (Invited) Substrate and Surface Effects on GaAs Integrated Circuits C. P. Lee, Rockwell International
- 3.2 Resonant Fowler-Nordheim Tunneling in n-GaAs-Undoped Al_xGa_{1-x}As-n⁺ GaAs Capacitors, T. W. Hickmott and P. M. Solomon, IBM, Yorktown Heights, R. Fischer and H. Morkoc, University of Illinois
- 3.3 New Infrared Detector on a Silicon Chip, Serge Luryi, Alexander Kastalsky, John C. Bean, Bell Labs, Murray Hill
- 3.4 Characterization of Hot Hole Effects in a Charge Coupled Device, H. H. Hosack, J. Hyneczek, D. Konrad, and R. D. McGrath, Texas Instruments
- 3.5 Bistable Switching of Metal-Tunnel Oxide-Semiconductor (MIOS) Junctions Using Minority Carrier Charge Insertion and Extraction Structures, E. R. Fossum* and R. C. Barker, Yale University,

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FRIDAY AFTERNOON, DECEMBER 2, 1983

Session IV: Advanced Fabrication Technology

Chairmen: E. Demoulin, CNET, France, John Aitken, IBM, T. W. Ekstedt, Hewlett Packard

- 4.1 (Invited) Role of Interfacial Oxides in Bipolar Devices, Bob H. Yun, IBM
- 4.2 Cross-section TEM and AES Analysis of Silicon on Insulator Structures Formed by High Dose Oxygen Implantation into Silicon, M. R. Taylor, C. G. Tuppen, R. P. Arrowsmith and J. D. Speight, BTRL, Martlesham Heath, England
- 4.3 Physical and Electrical Interface Characterization of Ion Implanted Buried Silicon Nitride Layers, H. Vogt, and G. Zimmer, J. Belz, K. Heidemann, and E. te Kaat Universitat Dortmund
- 4.4 Interface Microstructure of Self-Implant-Amorphized and Recrystallized Silicon on Sapphire, M. Parker, T. W. Sigmon and R. Sinclair, Stanford University, Stanford

Session V: Hot Carrier and Radiation Effects

Chairmen: T. P. Ma, Yale University, J. Maserjian, JPL

- 5.1 Thermally Stimulated Current Measurements of Trapped Holes in MOS Capacitors, Z. Shanfield, Northrop Research & Technology Center, Palos Verdes Peninsula, Calif.
- 5.2 E'Centers and Hole Traps in MOS Devices, P. M. Lenahan and P. V. Dressendorfer, Sandia, Albuquerque, N.M.

SATURDAY MORNING, DECEMBER 3, 1983

Session V, con't.: Hot Carrier and Radiation Effects

Chairmen: F. T. Feigl, Lehigh University, S. Lyon, Princeton University
P. Dressendorfer, Sandia Labs

- 5.3 (Invited) Charge Tunneling, Trapping, and Device Degradation in Thin SiO₂, C. M. Hu, University of California, Berkeley
- 5.4 (Invited) Electron Heating in SiO₂, D. J. Maria, IBM
- 5.5 Structural Relationship Between Electron and Hole Traps in Thermal SiO₂ Films, M. Aslam and P. Balk, Technical University Aachen
- 5.6 Study of Trap Generation Mechanism in LSI Gate Oxides Using Fowler-Nordheim Injection, N. Zamani and J. Maserjian, Caltech

continued

- 5.7 Dependence of Radiation-Induced Interface Traps on SiO₂/Si Interfacial Stress, Viktor Zekeriya* and T. P. Ma, Yale University
- 5.8 A Physical Model for Hot-Electron Induced Degradation in MOSFET's, Simon Tam, University of Calif., Berkeley, Fu-Chieh Hsu, Hewlett-Packard Labs, Palo Alto, Calif.

*Student participation partially supported by Conference