

IEEE 1981 SISC Technical Program

Technical Program Chairman:

James T. Clemens, Bell Laboratories

9:00 A.M. - Thursday, December 3, 1981

Session I: Metal Silicide Structures

Chairmen: Hy J. Levinstein, Bell Laboratories; and  
James Plummer, Stanford University

- 1.1 "Metal Silicide Structures for Use in VLSI Technology"  
by S. P. Murarka, Bell Laboratories.
- 1.2 "Epitaxial Silicides and Their Interfaces" by  
J. M. Poate, J. E. Bean, D. C. Jacobson, J. M. Gibson  
and R. T. Tung, Bell Laboratories
- 1.3 "Electron Beam Study of Silicide Schottky Diodes: by  
H. C. W. Huang, C. R. Aliotta and P. S. Ho, International  
Business Machines
- 1.4 "Interstitial Transition Metals and Schottky-Barrier Heights  
at Metal/Silicon Interfaces" by  
A. Madhukar, University of Southern California; and  
F. J. Grunthaner, Jet Propulsion Laboratory
- 1.5 "Noble Transition Metal Silicides: Trends in the Chemical  
Bonding in the Bulk and at the Metal/Si Interface: by  
P. J. Grunthaner and F. J. Grunthaner, Jet Propulsion  
Laboratory; and A. Madhukar, University of Southern  
California

2:30 P.M. - Thursday, December 3, 1981

Session II: Physical Characterization of the Insulator/Si  
Structure

Chairmen: Edward Poindexter, U.S. Army Electrical Tech-  
nology and Devices Laboratory; and C. Robert  
Helms, Stanford University

- 2.1 "The Detection and Evaluation of Hydrogen at the Si/SiO<sub>2</sub>  
Interface" by  
N. Johnson, Xerox

*Viscous flow model*

- 2.2 " Low Temperature - High Pressure Silicon Oxidation" by E. A. Irene, International Business Machines
- 2.3 "Thermal Oxidation of Silicon in Dry O<sub>2</sub> in the Thin Regime (<500 Å)" by H. Z. Massoud and J. D. Plummer, Stanford University; and E. A. Irene, International Business Machines
- 2.4 "Chemistry of Steam Oxidation of Silicon" by J. C. Mikkelsen, Jr., Xerox
- 2.5 "Properties of Thermal Oxides Grown on Polysilicon Doped In-Situ with Phosphorus" by M. Sternheim, E. Kinsbron, J. Alspector, P. A. Heimann, Bell Laboratories
- 2.6 "Oxidation-Enhanced Diffusion in Silicon at Short Oxidation Times" by I. Moskowitz and D. A. Antoniadis, Massachusetts Institute of Technology

8:30 A.M. Friday, December 4, 1981

Session II: Continued

- 2.7 "The Electronic Structure of Defects in Si<sub>3</sub>N<sub>4</sub>: The N Vacancy" by A. H. Edwards, F. L. Hampton and J. R. Cricchi, Westinghouse
- 2.8 "Structural Changes in SiO<sub>2</sub> Films and at the Si/SiO<sub>2</sub> Interface During Thermal Growth" by A. G. Revesz, Comsat Laboratories
- 2.9 "Observation of a Large Electrochemical Field in SiO<sub>2</sub> During the Thermal Oxidation of Si" by J. W. Rouse and C. R. Helms, Stanford University

Session III: Electrical Characterication of the Insulator/Si Structure

Chairmen: Dan Di Maria, International Business Machines; and Paul Dressendorfer, Sanida National Laboratories

- 3.1 " The Current Understanding of Charge Trapping in Oxide Structures" by F. Feigl, Lehigh University

- 3.2 "Interface Trap Generation in MOS Systems when Electrons are Captured by Trapped Holes" by  
S. K. Lai, International Business Machines
- 3.3 "Interface State Generation During Avalanche Injection of Electrons from Si into SiO<sub>2</sub>" by  
Toshio Sunago, S. A. Lyon and Walter C. Johnson, Princeton University

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Session III: Continued

- 3.4 "Observation of Radiation Induced Trivalent Silicon Defect Buildup at the Si-SiO<sub>2</sub> Interface in MOS Structures" by  
P. M. Lenahan, K. L. Brower, and P. V. Dressendorfer,  
Sandia National Laboratories
- 3.5 "X-ray Induced Current in MOS Structures: Significance of Contact Injection" by  
M. R. Chin and T. P. Ma, Yale University
- 3.6 "Electro-Optical Interface Study of MOS Tunnel Diodes" by  
Julie A. Shimer and Walter E. Dahlke, Lehigh University
- 3.7 "Observation of Positively Charged State Generation Near the Si/SiO<sub>2</sub> Interface During Fowler-Nordheim Tunneling" by  
J. Maserjian and N. Zamani, Jet Propulsion Laboratory
- 3.8 "The Chemical Structure of Trapped Charge Sites Formed at the Si/SiO<sub>2</sub> Interface by Ionizing Radiation as Determined by XPS" by  
F. J. Grunthaner, B. F. Lewis, and J. Maserjian, Jet Propulsion Laboratory; and A. Madhukar, University of Southern California
- 3.9 "Study of Charge Trapping as a Degradation Mechanism in EAROMS" by  
C. Falcony, D. J. DiMaria, D. W. Dong and K. M. DeMeyer,  
International Business Machines

8:30 A.M. - Saturday, December 5, 1981

Session IV: Advanced Structures

Chairmen: James Clemens, Bell Laboratories; and Jim Gates,  
Hughes Aircraft

- 4.1 "Research and Development in Semiconductor Surface Devices in Japan by  
N. Kawamura, Nippon Electric
- 4.2 "Interpretation of XPS Determined GaAs Interface Fermi-Level Position Variations by a Single Defect Model" by  
R. W. Grant, J. R. Waldrop, Steven P. Kowalczyk and  
E. A. Kraut, Rockwell International
- 4.3 "Interface Characteristics of MOSFET's On Silicon Prepared by Zone-Melting Recrystallization of Encapsulated Silicon on SiO<sub>2</sub>" by  
E. W. Maby and D. A. Antoniadis, Massachusetts Institute of Technology
- 4.4 "Current and Temperature Induced Contact Reactions at the Al-(100)Si Interface" by  
S. Vaidya and A. K. Sinha, Bell Laboratories
- 4.5 "Cube-Root Broadening of Space-Charge Packets" by  
K. K. Thornber, D. R. Nelson, and J. A. Cooper, Jr.,  
Bell Laboratories
- 4.6 "GaAs IGFETS and Two-Dimensional Electrons on MBE Grown AlGaAs/GaAs Heterostructures" by  
A. C. Gossard, D. C. Tsui, and H. L. Störmer, Bell Laboratories