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# NVMTS2005 PROGRAM

v3.3.1 as of 10/27/2005

## TUESDAY
November 8

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| 9AM | **OPENING REMARKS** |
| 9:15 | **PRESENTATION OF 2004 BEST PAPER AWARD** |
| 9:20 | **KEYNOTE ADDRESS: JOE BREWER, University of Florida** |
| 10:00 | *BREAK* |
| | **SESSION 1: FLASH** |
| 10:15 | An Overview on Twin-Flash™ Technology; E. Stein v. Kamienski, et al, Infineon Technologies, Germany |
| 10:40 | A Scalable Novel P-Channel Nonvolatile Memory Cell; Chih Jen, Huang and Yuan Chang Liu, United Microelectronics Corp., Central Research and Development, Taiwan |
| 11:05 | Fowler-Nordheim Erasing Time Prediction in Flash Memory; Pierre Canet, et al, L2MP-UMR, ST-Microelectronics, FRANCE |
| 11:30 | Embedded Flash on a CMOS Process Enables Secure Hardware Encyrption on Deep Submicron Designs; Joel Rosenberg, Virage Logic Corporation, CA |
| 12:00 | **LUNCHEON ADDRESS:** The United States National Helium Reserve: How and *Why?* |
| | **SESSION 2: MATERIAL SCIENCE** |
| 1:00 | Control Gate-Bit Line Leakage induced Cobalt Silicide Migration in 0.15um Embedded Flash Memory Devices; Sang Hyun Han, et al, Systems on Silicon Manufacturing Company, Singapore |
| 1:25 | CMOS / SONOS Nonvolatile Memory Technology for Space and Avionics Applications; Dennis A. Adams, et al, Lehigh University, Bethlehem, PA, Northrop Grumman Corporation, Baltimore, MD, Sandia National Laboratories, Albuquerque, NM, ATK Mission Research |
| 1:50 | *BREAK* |
| | **SESSION 3: FERAM** |
| 2:05 | Integrated Silicon On Insulator-Ferroelectric Capacitor Process for Non Volatile Universal Memory Applications; *Vikram Joshi, Symetrix Semiconductor, Palo Alto, CA* |
| 2:30 | A 1.0 Mbit SBT Ferro Electric Memory With Trinion Cell Architecture; Iu-Meng Tom Ho, Calvin Lichyun Wen, IOTA Technology Inc, San Jose, CA |
| 2:55 | Integration and Bit Distribution of Production-Worthy FRAM Embedded with 130nm CMOS Logic; K.R. Udayakumar, et al Silicon Technology Development, Texas Instruments Inc., Dallas, TX |
| 3:20 | The Endurance Performance of 0.5µm FRAM Products; Fan Chu and Tom Davenport, Ramtron International, Colorado Springs, CO |
| 3:45 | High Density Radiation Hardened FeRAMs on a 130nm CMOS/FRAM Process; *D. Kamp, et al, Celis Semiconductor, Colorado Springs, CO* |
| 4:10 | *END OF DAY* |

## WEDNESDAY
November 9

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| 8:30 | **RECONVENE** |
| 8:35 | **INVITED PAPER** Overview of Scaled and Nanotechnology Memories, Betty Prince, Memory Strategies International |
| | **SESSION 4: NEW TECHNOLOGIES** |
| 9:00 | A New Embedded NVM Technology for Low-Power, High Temperature, Rad-Hard Applications; Mike A. Beunder, et al, Cavendish Kinetics, Hertogenbosch, The Netherlands |
| 9:25 | Functionally expanded phase-change memory: Experiments on light influence on threshold voltage; S. Asokan, Indian Institute of Science, Bangalore, India; Semyon D. Savransky, The TRIZ Experts, Newark, CA |
| 9:50 | *BREAK* |
| 10:05 | Holographic Memory; *Dr Tien-Hsin Chao; Jet Propulsion Laboratory; Pasadena, Calif.* |
| 10:30 | New bistable proton-electron hybrid memory element; V.Joshkin, D. van der Weide and M.Lagally, UW-Madison, Madison, WI |
| 10:55 | Programmable Metallization Cell Memory Based on Ag-Ge-S and Cu-Ge-S Solid Electrolytes; Michael N. Kozicki, et al, Arizona State University, Tempe, AZ |
| 11:20 | A Scalable MRAM Design Capable of 10Gbits/Chip and Beyond; Dr Jimmy Zhu, Carnegie Mellon University, Pittsburgh, PA |
| 12:00 | **LUNCHEON ADDRESS:** Rear Adm. T Q Donaldson, Director, Stennis Space Center, Mississippi: *Recovery from Hurricane Katrina* |
| 1:00 | **Session 5: PANEL SESSION: Hard Disk Drives;** Panel Chair: Radu Andrei, Web-Feet Research |
| 2:30 | *END OF DAY* |

## THURSDAY
November 10

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| 8:30 | **RECONVENE** |
| 8:35 | **INVITED TALK KEN HUNT,** Air Force Research Laboratory, Kirtland AFB, NM |
| | **SESSION 6: PHASE CHANGE** |
| 9:05 | Characterization of a 4Mb Chalcogenide-Random Access Memory; Tom Storey, et al, BAE Systems, Manassas, VA |
| 9:30 | Model of OFF-ON transition and SET process in phase-change memory; Semyon D. Savransky, The TRIZ Experts, Newark, CA |
| 9:55 | *BREAK* |
| 10:10 | Study of Geometric Effect on Phase Change Random Access Memory; R. Zhao, et al, Data Storage Institute, Singapore |
| 10:35 | Investigation on Non-volatile and Non-rotation Phase Change Random Access Memory; L.P. Shi, et al Data Storage Institute, Singapore |
| 11:00 | RRAM Switching Mechanism; S. T. Hsu, et al. Sharp Laboratories of America, Inc., Camas, WA, and Texas Center for Superconductivity and Advanced Materials, University of Houston, Houston, TX |
| 11:25 | Perovskite RRAM Devices with Metal/Insulator/PCMO/ Metal Heterostructures; Xin Chen, Naijuan Wu, Alex Ignatiev, University of Houston, Houston, TX |
| 12:00 | **PLENARY TALK: EVOLVABLE HARDWARE** |
| | **SESSION 7: MODELING & TEST** |
| 1:00 | Strong electron correlation effects in non-volatile electronic memory devices; I. H. Inoue, M. J. Rozenberg, Correlated Electron Research Center (CERC), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba,Japan |
| 1:25 | 3-dimensional analysis on the cell string current of NAND Flash memory; H.-S. Oh, et al, Semiconductor R&D Center, Samsung Electronics Co., Korea |
| 1:50 | Radiation Testing; *Dr. Jeffrey Patterson, JPL, Pasadena, CA* |
| 2:15 | ***LATE NEWS*** |
| appx 3:00 | ***CLOSING REMARKS END OF SYMPOSIUM*** |