

PRELIMINARY ADVANCE PROGRAM

# 2002 GaAs REL Workshop

SUNDAY October 20, 2002, Preceding the GaAs IC Symposium  
Room TBA, Doubletree Hotel, Monterey, California

SPONSORED BY JEDEC COMMITTEE JC-14.7, EIA, and in cooperation with the IEEE.

**Registration** (Cost of Workshop is \$125 at the door, make checks payable to EIA) . . . . . **7:30 AM**

**Welcome, Opening Remarks, Introductions, Start** Anthony Immorlica, Workshop Chairman . . . **8:00 AM**

**SESSION 1 - Reliability Issues in Emerging Technologies/GaN** Robert Ferro, Session Chair **8:15 – 9:35 AM**

1. **Tutorial and General Discussion.** Kurt Smith-Raytheon, Guest-University of Michigan.
2. **Trap Generation in GaN HEMTs Resulting from Short-Term DC Stress.** J.A. Mittereder, S.C. Binari, J.A. Roussos, D.S. Katzer, D. Storm, D.D. Koleske, A.E. Wickenden, and R.L. Henry. Naval Research Laboratory.
3. **Hot Electron Effects on Undoped AlGaIn/GaN High Electron Mobility Transistors.** H.Kim, A.Vertiatikh, V. Tilak, R.M. Thompson, T. Prunty, J.R. Shealy and L.F. Eastman. Cornell University.

**SESSION 2 - Reliability Topics** Sammy Kayali, Session Chair . . . . . **9:50 AM – NOON**

1. **Reliability of 100nm Silicon Nitride Capacitors in an InP HEMT MMIC Process.** W.J. Rowe, B.M. Paine, A. E. Schmitz\*, R.H. Walden\* and M.J. Delaney.\* Boeing Satellite Systems Inc. & \*HRL Laboratories, LLC.
  2. **Recent Test Results of Commercial GaAs MESFET, HFET, and PHEMT Devices for Use in a Flight Solid-State Power Amplifier.** Elbert Nhan, Sheng Cheng, Marshall J. Jose, Steve O. Fortney, and John E. Penn. The Johns Hopkins University Applied Physics Laboratory.
  3. **The Effects of Ternary Alloys on Thermal Resistances of HBTs, HEMTs, and Laser Diodes.** Bruce M. Paine, Ami P. Shah and Thomas Rust III. Boeing Satellite Systems Inc.
- Short Break -----
4. **Benchmarking Reliability Tests for Plastic Laminate Modules.** W.J. Roesch and D.H. Byrd. TriQuint Semiconductor, Oregon.
  5. **Accelerated Life Test Calculations with the Method of Maximum Likelihood: An Improvement of Least Squares.** Charles S. Whitman. RF Micro Devices.
  6. **Reliability Evaluation on Dual-Etch-Stop InGaAs PHEMTs.** Frank Gao. Skyworks Solutions Inc.

**Lunch** . . . . . **12:15 PM – 1:30 PM**

**SESSION 3 - InP-Based HBT Reliability** Bill Roesch, Session Chair . . . . . **1:45 – 2:25 PM**

1. **Very-Low-Temperature Lifetests on InP-Based HBT's – An Update.** Bruce M. Paine, Stephen Thomas III\* and Michael J. Delaney\*. Boeing Satellite Systems Inc. & \*HRL Laboratories, LLC
2. **Reliability of  $1 \times 5 \mu\text{m}^2$  Emitter InAlAs/InGaAs HBTs Under Bias and Thermal Stress.** Stephen Thomas III, Mary Chen, Ross Bowen. RL Laboratories LLC.

**SESSION 4 - GaAs-Based HBT Reliability** Peter Ersland, Session Chair . . . . . **2:45 – 3:45 PM**

1. **Reliability of Manufacturing 6inch InGaP HBTs.** Sanghoon Jeon, Sung-Su Kim, Dae-Hyon Kim, Jae-Woo Park. Knowledge\*on Inc.
2. **Investigation of Short-Term Current Gain Stability of GaInP/GaAs-HBTs grown by MOVPE.** F. Brunner, A. Braun, P.Kurpas, J. Schneider<sup>1</sup>, J.Wurfl, and M. Weyers. Ferdinand-Braun-Institut. <sup>1</sup>Hahn-Meitner-Institut.
3. **Reliability Implication of InGaP HBT Emitter Ledge Dimension.** E.F. Yu, D.G. Hill, C.E. Weitzel, R.D. Reed<sup>1</sup> and C.S. Cook<sup>2</sup>. Compound Semiconductor Technologies Laboratory. <sup>1</sup>Compound Semiconductor One (CS-1) <sup>2</sup>Process and Materials Characterization Laboratory, Semiconductor Products Sector, Motorola, Inc.

**Late Papers** Wallace Anderson, Technical Program Chairman . . . . . **4:00 PM**

Website: <http://www.jedec.org/home/gaas/>