

ADVANCE PROGRAM – Formerly the GaAs REL Workshop

2005 ROCS Workshop

SUNDAY October 30, 2005, Preceding the Compound Semiconductor IC Symposium
Grand Salon FGH Room, Hyatt Grand Champions Hotel, Palm Springs, California

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

Registration (\$175 at the door, make checks payable to JEDEC). **7:30 AM**

Welcome, Opening Remarks, & Start Tony Immorlica and Peter Ersland, Workshop & Program Chairmen . . . **8:10 AM**

Invited Presentation: Reliability Of Compound Semiconductor Workshop Historical Review . . . **8:30 AM**
William J. Roesch. TriQuint Semiconductor, Inc., Hillsboro, Oregon.

SESSION 1 - HBT Reliability Robert Ferro, Session Chair **9:00 – 10:15 AM**

1. Reliability Results of HBTs with an InGaP Emitter. Charles S. Whitman, RF Micro Devices, Greensboro, N.C.
2. Evaluation of SiGe HBT Intrinsic Reliability using Conventional & Step Stress Methodologies, Craig Gaw, T. Arnold, R. Martin, L. Zhang, and D. Zupac, Freescale Semiconductor, Inc., Tempe, Arizona.
3. Determining Factors Affecting ESD Failure Voltage Using DOE. Charles S. Whitman, Terri Gilbert, Ann Rahn, and Jennifer A. Antonell, RF Micro Devices, Greensboro, North Carolina.

SESSION 2 - Reliability Methodologies Sammy Kayali, Session Chair **10:45 – Noon**

1. An investigation and comparison of 45-degree spread thermal model and other techniques to extract junction temperature of HBT and pHEMT for reliability life test. S.C. Chen, et.al. WIN Semiconductors Corp., Taiwan.
2. An Overview of Reliability Testing Challenges in Integrated PA Modules for Wireless Applications, Yi Qu, Preston Scott, Leslie Marchut, Mike Ferrara, RF Micro Devices, Greensboro, North Carolina.
3. Thermal Acceleration of Compound Semiconductors in Humidity, W.J. Roesch, TriQuint Semiconductor, Inc.

Lunch - Grand Salon ABC Room **Noon – 1:30 PM**

SESSION 3 - High Power Devices Roberto Menozzi, Session Chair **1:30 – 2:45 PM**

1. Full Band Ensemble Monte Carlo Simulations for Reliability Investigation of High-Voltage Single & Double Heterojunction Bipolar Transistors for Military & Base Station Applications, including a proposed High Breakdown Composite Collector Design. S. Madra, WJ Communications, Inc. San Jose, California.
2. Reliability of Large Periphery GaN-on-Si HFETs, S. Singhal, Li, Johnson, Nagy, Marquart, Therrien, Chaudhari, Hanson, Rajagopal, Piner, and Linthicum, Nitronex Corporation, Raleigh, North Carolina.
3. Application of Aluminum Metallisation in LD MOS RF Power Applications. P.J. van der Wel, R.A. van den Heuvel, H.J.F. Peuscher, Y. Li and J.G. Gommans, Philips Semiconductors, Nijmegen, The Netherlands.

SESSION 4 - pHEMT Reliability Bill Roesch, Session Chair **3:15 – 4:55 PM**

1. Reliability Testing of LNA with 0.18µm Gate. Hei-Ruey H. Jen, Peter Ersland, Carlos Gil, and Shiou Lung Grace Chu, M/A-COM, Lowell, MA.
2. Reliability Investigation of Metal-Semiconductor Diodes in an E/D pHEMT Process, Shivarajiv Somisetty, Peter Ersland, Xinxing Yang. M/A-COM, Lowell, MA..
3. Physical Evidence of Electromigration in GaAs pHEMT Schottky Diodes Operating at High Forward Current Density. Y.C. Chou, et.al., Northrop Grumman Corporation, Redondo Beach, California.
4. Reliability of E/D pHEMT Process for Control Product Applications. Xinxing Yang, Peter Ersland M/A-COM..

Late Papers Peter Ersland, Session Chair **4:55 PM**