2014 ROCS Workshop

Monday, May 19, 2014
Preceding the CS MANTECH Conference

Registration/Breakfast (Cost of Workshop is $250 at the door) ............ Breakfast Room TBA ............ 7:00 AM

Welcome, Opening Remarks, Introductions, Start .... Peter Erland, Technical Program Chair .... 8:15 AM

SESSION 1 – HBT and Capacitor Impacts on Reliability .... Bill Roesch, Session Chair .... 8:25 – 9:45 AM


2. Thermal runaway and its implications on HBT circuit reliability
Veankta Chivukula and Preston Scott; RF Micro Devices, Greensboro, NC.


4. Assessing MIM Capacitor Defect Levels for 6 inch HBT Production Line
Lance Rushing and James Zhang; Skyworks Solutions Inc., Newberry Park, California

SESSION 2 - GaN Aspects, Part 1 .... Randy Lewis, Session Chair .... 10:15 – 11:35AM

1. Off-state degradation of AlGaNs/GaN HEMTs: Saturation of defect generation
Huarui Sun, Miguel Montes Bajo, Michael J. Uren, Martin Kuball; University of Bristol, United Kingdom

2. Influence of surface states on voltage robustness of AlGaN/GaN HFET power devices, M. Wespel, Dammann, Baeumler, Polakoy, Reiner, Waltrete, Quay, Mikulla, Ambacher: Fraunhofer Institute, Germany

3. Temperature-accelerated degradation of GaN HEMTs under high-power stress: activation energy of drain current degradation, Yufei Wu, Chia-Yu Chen, and Jesús A. del Alamo, Massachusetts Institute of Technology

4. Early detection of reliability limiting variances in semiconductor manufacturing by advanced in-situ monitoring, Oliver Schulz and Tom Thieme; LayTec AG, Berlin, Germany

Lunch - TBA, Plaza Foyer, w/ CS MANTECH Workshop ................. 11:35 AM – 1:00 PM

SESSION 3 - GaN Aspects, Part 2 .... Martin Kuball, Session Chair ............ 1:00 – 2:00 PM

1. Decrease in On-State Gate Current of AlGaNs/GaN HEMTs by Recombination-Enhanced Defect Reaction of Generated Hot Carriers, H.Sasaki, Kadoiwa, Koyama, Kamo, Yamamoto, Oishi, Hayashi; Mitsubishi Electric Corp.

2. High Field Reliability of GaN Power Devices, Kurt V. Smith and Jeff Haller; Transphorm, Inc.

3. Investigation and Resolution of a Very High Ea (Threshold) Failure Mechanism in a 40V GaN FET
Donald A. Gajewski; Cree, Inc., Randall Lewis & Benjamin Decker; Northrop Grumman

ROCS Shocks! Shocking Photo Contest Judging .... (prize = Tablet) .... 2:00 – 2:30 PM

SESSION 4 - Epoxy, Wafer & Humidity Failure Mechanisms .. Bob Ferro, Session Chair .. 2:30 – 3:50 PM

1. Initial Shelf Life Time Study of Photo Definable Epoxy Wall with Temperature and Humidity Stress
Xiaokang Huang, Campell, Clarke, Bedard, Ivie, Gibbon, Breaux, Tran, Hall, Hotchkiss, Kuan; TriQuint, Texas


3. Wafer Level Robustness Test Bench, Peter Abele, Simon Stolz, Markus Lanz, and Dag Behammer
United Monolithic Semiconductors GmbH, Ulm, Germany; now with Hochschule Konstanz, Konstanz, Germany


SESSION 5 – Late News & Conclusion. Announcement of ROCS Shocks Photo Contest Winner .... 3:50 – 4:30 PM