

# 2010 ROCS Workshop

Monday, May 17, 2010, Room: Salon G&H

Preceding the MANTECH Conference, Downtown Marriot Waterfront, Portland, Oregon

**Registration/Breakfast** (Cost of Workshop is \$225 at the door, make checks payable to JEDEC) . . . . . **7:30 AM**

**Welcome, Opening Remarks, Introductions, Start** . . . . . Peter Ersland, Technical Program Chairman . . . . . **8:00 AM**

**SESSION 1 – Reliability Topics** . . . . . Bob Ferro, Session Chair . . . . . **8:10 – 9:30 AM**

1. **ROCS Workshop 25th Anniversary**, Bill Roesch, TriQuint Semiconductor.
2. **Multifaceted Reliability Assessment of 0.1 $\mu$ m GaAs PHEMTs**, G.D. Via<sup>1</sup>, B. Winningham<sup>1</sup>, B. Poling<sup>1</sup>, J. Theimer<sup>1</sup>, R. Neidhard<sup>1</sup>, L. Kehias<sup>1</sup>, L. Gunter<sup>2</sup>, R. Wallace<sup>2</sup>, G. Duh<sup>2</sup>, and P. Smith<sup>2</sup>, <sup>1</sup> Air Force Research Laboratory, <sup>2</sup> BAE Systems.
3. **Application of EFA to Failure Analysis on GaAs Products**, Pi-Hsia Wang, Carol Chen, Frank Chou, and Chang-Hwang Hua, WIN Semiconductors Corporation.
4. **Update: Developing a Power Amplifier Module Standard**, Bill Roesch, TriQuint Semiconductor.

**SESSION 2 - Gallium Nitride Voltage Stress** . . . . . Roberto Menozzi, Session Chair . . . . . **10:00 – 11:20AM**

1. **A comparative study of 1/f noise in GaN/AlGaIn HEMTs grown under Ga-rich, N-rich and NH<sub>3</sub>-rich conditions**. T. Roy, E.X. Zhang, S.A. Francis, D.M. Fleetwood, R.D. Schrimpf, Vanderbilt University.
2. **AlGaIn/GaN HEMT Degradation under ON and OFF-state Stress**, E.A. Douglas, C.Y. Chang, D. Cheney, Chien-Fong Lo, Liu Lu, Fan Ren, and S.J. Pearton, University of Florida.
3. **Critical factors influencing the voltage robustness of AlGaIn/GaN HEMTs**, M. Cäsar, M. Dammann, V. Polyakov, P. Waltereit, R. Quay, M. Mikulla, O. Ambacher, Fraunhofer Institute for Applied Solid-State Physics.
4. **Correlation between electrical and material degradation in GaN HEMTs stressed beyond the critical voltage**, Jungwoo Joh<sup>1</sup>, J.A. del Alamo<sup>1</sup>, K. Langworthy<sup>2</sup>, S. Xie<sup>2</sup>, and T. Zheleva<sup>3</sup>, <sup>1</sup> Massachusetts Institute of Technology, <sup>2</sup> CAMCOR University of Oregon, <sup>3</sup> U.S. Army Research Laboratory.

**Lunch** Room: TBA. . . . . **11:30 AM – 1:00 PM**

**SESSION 3 - GaN Trap & Light Effects** . . . . . Sammy Kayali, Session Chair . . . . . **1:00 – 2:20 PM**

1. **Compact Modeling of GaN HEMTs Including Temperature- and Trap-Related Dispersive Effects**, D. Mari, M. Bernardoni, G. Sozzi, R. Menozzi, University of Parma, and G.A. Umana-Membreno, B.D. Nener, The University of Western Australia.
2. **Comparative study of AlGaIn/GaN HEMTs robustness versus buffer design variation by applying electroluminescence and electrical measurements** P. Ivo<sup>1</sup>, A. Glowacki<sup>2</sup>, E. Bahat-Treidel<sup>1</sup>, R. Lossy<sup>1</sup>, J. Würfl<sup>1</sup>, C. Boit<sup>2</sup>, G. Tränkle<sup>1</sup>, <sup>1</sup> Ferdinand-Braun-Institut, <sup>2</sup> Technische Universität Berlin.
3. **AlGaIn/GaN HEMT Device Reliability: Importance of Diffusion Processes for Device Reliability**, Martin Kuball\*, Milan Ćapajna\*, Richard J.T. Simms\*, Mustapha Faqir\*, Umesh K. Mishra<sup>#</sup>, \* University of Bristol, United Kingdom, <sup>#</sup> University of California, Santa Barbara.
4. **Accelerated Aging GaN HEMTs through Optical Pumping**, David Cheney, Brent Gila, Erica Douglas, Fan Ren, and Steve Pearton, University of Florida.

**ROCS Shocks - Photo Contest Judging** (prize = iPod MP3 player) . . . . . **2:45 PM**

**SESSION 4 - Novel Stress Methods** . . . . . Bill Roesch, Session Chair . . . . . **3:00 – 4:20 PM**

1. **Ionizing Radiation Test of a Hydrogen Getter Useful for Hermetic Microwave Housings**, John Scarpulla, The Aerospace Corp., and Senthil Kanagavel, Cookson Electronics.
2. **Factors Affecting Void Formation in Plated Gold Interconnect**, Dave Littleton, Dorothy June M. Hamada, and Bill Roesch, TriQuint Semiconductor.
3. **Metal Defect Analysis using Machine Model ESD Tester**, Michael Meeder and Leslie Marchut, RFMD.
4. **Empirical Investigation on Device-Degradation Indicators Under Nonlinear Dynamic Regime**, Antonio Raffo<sup>♦</sup>, Sergio Di Falco<sup>♦</sup>, Giovanna Sozzi<sup>♠</sup>, Roberto Menozzi<sup>♠</sup>, Dominique M. M.-P. Schreurs<sup>♣</sup>, and Giorgio Vannini<sup>♦</sup>, <sup>♦</sup> University of Ferrara, Italy, <sup>♠</sup> University of Parma, Italy, <sup>♣</sup> Katholieke Universiteit Leuven, Belgium.