

CMSE 2011 PROGRAM

Tuesday, February 8

Session 1: Application Approaches

Chair: Anthony Lai, Aitech Defense Sys.

- 1.1 ***Rapid Prototyping System for Hi-Rel Applications;***
A. Jordan, Aeroflex
- 1.2 ***Overcharge Protection and Cell Voltage Monitoring for Lithium-ion Batteries;***
G. Altemose, Aeroflex Plainview
- 1.3 ***Thin Film Chip Resistors and Arrays for High Temperature Applications Up to +230°C;***
D. Vignolo, Vishay Sfernice
- 1.4 ***On-Chip ECC: Addressing SRAM SER in a COTS World;***
B. Haig, GSI Technology

Session 2: Class Y – Non-hermetic Military ICs

Chair: Larry Harzstark, The Aerospace Corp.

- 2.1 ***Class Y – Non-hermetic ICs for Space;***
M. Sampson, S. Agarwal, R. Roosta, T. Wilson, JPL, NASA
- 2.2 ***A Review of Ceramic Flip Chip for Class Y;***
J. Fabula, G. Maloney, Xilinx
- 2.3 ***Panel Discussion*** - Panel to be selected

Session 3: Obsolescence Mitigation & Components Engineering

Chair: Dr. Andrew Kostic, The Aerospace Corp

- 3.1 ***Recent Developments in Mitigating Obsolete Components;***
J. Larsen, Aeroflex Colorado Springs
- 3.2 ***Taking EEE Part Management Beyond Obsolescence;***
Y. Kim, Moog Inc.
- 3.3 ***Electronic Systems Obsolescence Management (ESOM) SF-2.0;***
L. Melatti, Channel One
- 3.4 ***PEMs Replacement of Obsolete Electronic Components;***
M. Marshall, Integra Technologies
- 3.5 ***What ESA Qualified Manufacturers Offer to US Space Industry;***
D. Vignolo, Vishay Sfernice
- 3.6 ***Ruggedized System-in-a-Package Solution;***
T. Thanh, Trident Space & Defense Sys.
- 3.7 ***Problems with Voltage Regulators & Their Datasheets;***
C. Hymowitz, S. Sandler, AEi Systems, LLC

- 3.8 ***Unique Number Generator for IC Fingerprinting & Authentication;***
G. Zawitoski, National Semiconductor Corporation
- 3.9 ***Advancements Wet Tantalum Capacitors;***
B. Brunette, AVX Tantalum Corporation

EXHIBITS AND NETWORKING RECEPTION

Wednesday, February 9

Session 4: New Reliability Practices

Chair: John Prymak, Kemet Electronics

- 4.1 ***RTSX-S Reliability Calculator and How to Use it;***
L. Harzstark, The Aerospace Corp.
- 4.2 ***Improved Techniques to Estimate Reliability in Advanced Semiconductor Devices and Avionics Systems;***
D. Redman, AVSI, J. Chapman, DSPO
- 4.3 ***DPA Results and Reject Causes;***
T. Devaney, Hi-Rel Labs.
- 4.4 ***State & Federal GHG Emission Reporting Requirements & Impact;***
A. DerMarderosian Jr., Raytheon

Session 5: Testing Standards & Issues

Chair: Aaron DerMarderosian Jr., Raytheon

- 5.1 ***Current State of Tantalum Capacitor Surge Current Testing for Military and Space Applications;***
E. Reed, KEMET
- 5.2 ***Testing Issues for the Latest Memory Technologies;***
M. Marshall, Integra Technologies
- 5.3 ***Prohibited Materials Test Methods and Standards;***
T. Hester, Raytheon
- 5.4 ***Risk Mitigation Using Electrical Testing for Counterfeit Avoidance;***
S. Ali Lilani, Silicon Turnkey Solutions
- 5.5 ***Comparison of XRF and SEM/EDS Measurements of Solder Alloys for High Reliability Applications;***
M. Haller, Fischer Technology, Inc.; S. Dill, Helmut Fischer GmbH; M. Petkova, L. Ngo, Presidio Components

Lunch with the Exhibitors

Parallel with Session 7

Session 6: Rad Hard Components & Technology

Chair: Ron Lake, Aeroflex

- 6.1 INVITED SPEAKER: ***Rad Hard Issues with Advanced Technologies;***
J. Benedetto, Aeroflex
- 6.2 ***Soft Errors in Modern Memory Technology;***
C. Slayman, M. Silverman; Ops A La Carte
- 6.3 ***Memory Roadmap for HiRel Applications;***
A. Jordan, Aeroflex Colorado Springs
- 6.4 ***TID, SEL and SEE Radiation Tests Methodology and Results for a Highly Integrated and Space Qualified Point of Load Converter;***
P-E Berthet, 3D Plus
- 6.5 ***A Methodology for Incorporation of Displacement Damage Effects into the Qualification of MIL-PRF-19500 Radiation Hardness Assurance (RHA) Devices;***
B. Triggs, SEMICOA
- 6.6 ***Reconfigurable Advanced COTS-based Electronics & Detectors for New Space Missions;***
D. Czajkowski, M. Fennell, D. Sellers, B. Vermeire, D. Strobel, E. Li, J. Romero, Space Micro Inc.

Parallel with Session 6

Session 7: Return of Seal Leak and RGA Issues

Organizer & Chairman: Robert Lowry, Consultant

- 7.1 ***Introduction to Hermeticity and RGA Issues;***
B. Lowry, Electronic Materials Consulting
- 7.2 ***Gross Leak Immersion Test Challenges in Hermetically Sealed Microelectronic Assemblies;***
C. Slayman, A. DerMarderosian Jr., Raytheon
- 7.3 ***Impact of a Tighter Leak Spec and Issue with Correlation;***
T. Green, TJ Green Associates LLC
- 7.4 ***Theory and Results of Kr85 Leak Testing;***
G. Neff, Isovac Engineering
- 7.5 ***Modern Gettering Technologies for Hermetic Microelectronics and MEMs Packaging;***
R. Kullberg, Vacuum Energy, Inc.
- 7.6 ***High Vacuum MEMs Packaging Challenges;***
D. Muhs, P. Barnes, SST International
- 7.7 ***DSCC Perspective on Moisture Control and Hermeticity;***
A. Barone, D. Miller, DSCC
- 7.8 ***Discussion & Summary***

Close of General Sessions

Thursday, February 10

Parallel Tutorial & Workshop

Tutorial - Advance X-Ray Techniques and Equipment;

Dr. B. Cardoso, Creative Electron

This tutorial covers the latest x-ray technology in the detection and identification of counterfeit electronic components. It is targeted at component engineers, quality personnel and provides hands on training on the state of the art equipment that will allow attendees to dramatically improve their quality assurance programs. The equipment and software will be used to demonstrate its value in detecting counterfeit components. In addition its other operating techniques will be demonstrated which include:

- 2D X-ray Inspection
- 3D X-ray Inspection
- Component Tomography (CT) Scan
- X-ray Microscopic Inspection

Workshop - Hermeticity Testing for Military Components;

Thomas J. Green, TJ Green Associates LLC

Hermeticity testing and associated high moisture inside packages intended for Military and space applications continue to be of critical importance. The course covers brief description of hermetic sealing process, current leak test techniques in Mil-Std-883 Test Method 1014, plus the traditional helium methods, gross leak testing, Optical Leak Test (OLT), Radioisotope Kr-85 and Cumulative Helium Leak Detection. The focus will be on practical issues facing the user and important lessons learned over the years. Also discussed is the package RGA limit of Residual Gas Analysis related to 5,000 PPM as to expected lifetimes of fielded systems. A comprehensive set of course notes and the "Practical Guide to TM 1014" will be provided each attendee.

Close of CMSE 2011