

Minnowbrook

“Moisture in Microelectronics”



Minnowbrook
Microelectronics

Minnowbrook...A forested retreat at the University of Syracuse Conference Center in the Adirondack Mountains of New York where engineers, scientists and technologists meet to explore solutions to the deleterious effects of moisture in microelectronics. Moisture is ubiquitous, and an insidious threat to reliability of all types of microelectronics. It's the number one cause of early field failures and reliability issues in both cavity style and encapsulated microelectronic devices. Minnowbrook fosters open discussions of the physics/chemistry surrounding the damaging effects of moisture, moisture-related failure mechanisms and their mitigation. Since the 1980s, Minnowbrook has tackled the problem of moisture control in electronics. Early meetings focused exclusively on moisture control in hermetic packages for military and aerospace. Discussions at the Minnowbrook forum were a key factor in mitigating these problems and achieving dependable hermetic parts for the US military. Since then Minnowbrook has evolved to also address moisture control for non-hermetic packages used in a wide variety of industries. As depicted in the logo, we seek participation from industry, academia, and government to provide varying perspectives on this important topic.

Targeted Industries:

- Military and Aerospace
- Class III Medical implants
- COTS for Military
- Oil and Gas Downhole
- MEMS and Sensors
- Optoelectronics
Photonics LEDs

You are invited to attend and present on a variety of topics including, but not necessarily restricted to:

- RGA/IVA and MIL-STD-883 TM 1018...Chemistry Happens!
- Hermeticity TM 1014...tighter leak rates, new test methods, correlation studies, etc.
- IGA, getters hermeticity testing for Class III Medical Implants and in-vivo device applications
- Lessons learned from qualification failures and resultant Failure Analysis/Corrective Action
- Diminishing source of supply of krypton, helium and fluorocarbons used in hermeticity testing
- Challenges of modifying commercial electronics for space applications
- Surface treatments, coatings, and encapsulants for inhibiting moisture ingress
- Strategies and technical challenges for waterproofing commercial electronics
- Optoelectronics and commercial LED packaging to minimize moisture related problems
- Non-Hermetics for Mil and Aerospace Class Y, P Appendix D for Hybrids
- Reliability testing of non-hermetic plastic encapsulated microelectronics
- Moisture getters, hydrogen getters and the use of polymerics in hermetic cavities
- Moisture mitigation strategies for nano liter MEMS and Sensors
- Next Generation packaging technologies and encapsulation to inhibit moisture ingress
- Standards for IVA and Hermeticity Testing (e.g. RGA Single Sample Cylinder)



Why should I attend Minnowbrook?

Minnowbrook is quite different from a typical technical conference. It utilizes a casual workshop format where questions and discussions often take longer than presentations (which are informal with slides or just a “white board talk”). The informality provides greater insight into problems and solutions, encourages side discussions and industry networking. These are informational meetings with a strong focus on education.