

Thursday 4 March: Humidity interaction with electronic systems, components and mechanisms

- 09:30-10:00 **Introduction to the seminar and humidity effects on electronics: where do we stand?**
Rajan Ambat, Center for Electronic Corrosion, DTU
- 10:00-10:30 **Humidity robustness of vehicle electronics – SIR-tests with superimposed self-heating**
Lothar Henneken, Automotive Electronics, Robert Bosch, Germany
- 10:30-11:00 **Analysis of dendritic corrosion phenomena on differently treated power electronic circuit**
Victoria Zimmermann, Fraunhofer Institute, Erlangen, Germany
- 11:00-11:20 **Coffee Break**
- 11:20-11:50 **Comparison between mixed flowing gas and flowers of sulphur corrosion testing**
Laura Frisk, Trelic, Finland
- 11:50-12:20 **Humidity and material induced failure mechanisms in low and high voltage electronics**
Markus Meier, Zestron, Germany
- 12:20-13:20 **Lunch Break**
- 13:20-13:50 **The role of carbonaceous material in conductivity: laboratory test and ambient data**
Luca Ferrero, University of Milan Bicocca, Italy
- 13:50-14:20 **To be announced**
- 14:20-14:40 **Coffee Break**
- 14:40-15:10 **Chloride containing Foreign Material in Epoxy Mold Compound**
Lena Saier and Lutz Muller, Automotive Electronics, Robert Bosch, Germany
- 15:10-15:40 **The Forensics of Dendrite Shorting**
Terry Munson, Foresite, USA
- 15:40-15:50 **Thursday summary**

Friday 5 March: Humidity effect on electronics: Packaging, modelling humidity effects and testing

- 09:30-10:00 **Key takeaways from an extrinsic corrosion mechanism during biased humidity tests in packages**
Amar Mavinkurve, NXP Semiconductors, Netherlands
- 10:00-10:30 **Water uptake evaluation in plastic packages: FEM simulation modeling and data comparison with Electrochemical Impedance Spectroscopy experimental approach**
Sonia Morin, ST Microelectronics, Italy
- 10:30-11:00 **Investigation of key influencing factors at automotive H2S-corrosion-testing**
Stefan Schoemaker, Quality Manager, Osram, Germany
- 11:00-11:20 **Coffee Break**
- 11:20-11:50 **Derivation of local humidity loads inside of vehicle electronics – simulation approach**
Balazs Toth, Automotive Electronics, Robert Bosch, Germany
- 11:50-12:20 **Critical level of water film build up for failure and modelling condensation**
Helene Conseil Gudla & Alessandro Checchi, Mechanical Engineering, Technical University of Denmark
- 12:20-13:20 **Lunch**
- 13:20-13:50 **Electrochemical modeling of leak current phenomenon on PCBA surface**
Rajan Ambat & Ioannis Mantis, Mechanical Engineering, Technical University of Denmark
- 13:50-14:20 **Advanced Humidity Testing under High Voltage**
Christian Zorn, University of Bremen, Germany
- 14:20-14:40 **Coffee Break**
- 14:40-15:10 **Climate data analysis for humidity effects on electronics**
Max Peter Spooner & Murat Kulahci, DTU Compute, Technical University of Denmark
- 15:10-15:40 **Why the IEC 60529 water protection standard must be changed?**
Michael Pecht, CALCE, University of Maryland
- 15:40-15:50 **Summary of seminar and concluding remarks**