



Announcement of Session on “Corrosion reliability of Electronic Materials and Devices”

Electronic control units, power modules, and consumer electronics are used today in a wide variety of varying climatic conditions. Varying external climatic conditions of temperature and humidity can cause an uncontrolled local climate inside the device enclosure. Uncontrolled humidity together with number of other factors including the presence of hygroscopic contamination resulting from the PCBA manufacturing process can introduce deviation from desired functionality or even intermittent or permanent failure of the device. Basic mechanisms causing these failures are related to the electrochemical and corrosion process occurring under the exposure conditions. The formation of water layer on the PCBA surface can be looked as the process determining the risk of failure occurrence and the failure mode itself i.e. increase of leakage currents, electrochemical migration and corrosion. The parameters like solder mask, residues from PCBA assembly process, and the type of surface mount components have an influence on the water layer formation on PCBA surface.

Both industrial electronics and consumer electronics suffer from reliability issues due to corrosion, which includes application such as in humid and harsh environments. Therefore, incorporating enhanced corrosion performance in the design is relevant for all, which needs interaction between electronics, electrical, material, and corrosion specialists.

The session in Eurocorr 2021 will focus on the following topics:

- Corrosion failure modes and mechanisms in electronics
- Physics of failure approach to humidity related issues
- Process cleanliness, PCBA design aspects, and water layer formation
- Corrosion mitigation and prediction strategies for electronics
- Specific corrosion issues related to materials in electronics and components
- Issues related to the use of polymers in electronics and corrosion
- Reliability of electrical contacts and fretting corrosion
- Electronic corrosion sensing for prediction and control
- Importance of enclosure design and packaging to control humidity effects
- Moisture transport modelling for electronics devices
- Humidity related issues of high power components
- Testing for corrosion reliability

Please submit your abstract online via www.eurocorr.org before January 19, 2021.

I am looking forward to your contribution and participation in EUROCORR 2020 “Materials science and advanced technologies for better corrosion protection” on September 19-23, 2021, in Budapest, Hungary.

Rajan Ambat

Chair WP23: Corrosion reliability of electronics

Expected duration: 1 day

Expected audience: 30-40 attendees