

Announcement of Joint Session on “Corrosion issues of electric vehicles and e-mobility systems”

Organized jointly by [WP17: Automotive corrosion](#), [WP23: Corrosion reliability of Electronics](#) and [TF: Corrosion in Green & Low Carbon Energy Technologies](#)

Electric mobility is a strong evolving trend in the automotive industry that offers increasing growth prospects for hybrid, electrical and fuel cell vehicles. Electrification of the vehicles and e-mobile systems suffer from special corrosion issues related to the electronics parts, electrical systems but also issues related to durability of different designs of battery casing (additional galvanic coupling with grounding, fretting corrosion...).

Although, some level of electronics is always part of an automotive, and therefore suffer from humidity related reliability issues due to corrosion, electrification brings new corrosion challenges due to the higher power and associated power electronics and control systems.

Additionally, electrical parts, battery components can also undergo corrosion under external exposure conditions. Efficiency of control systems including power management can be compromised due to humidity effects causing stray currents, loss of power from the battery, and failure due to corrosion.

As an example, an eco-friendly solar roof system can ensure up to 60 percent of batterie charge and work even while driving. However, roof system is exposed to multiple environmental stresses and understanding of its possible degradation mechanisms is crucial to improve the system life time and reliability.

This joint session focus on bringing together this interdisciplinary area as a common platform to discuss these issues.

Joint session will focus on corrosion issues of electric vehicles and e-mobility systems, specifically covering:

- Corrosion reliability issues of electronic control systems and other devices
- Designed solutions to meet anti-corrosion requirements of battery casing, battery components (e.g. how to secure high voltage battery systems from corrosion while also ensuring safety integrity of this component in the car)
- Corrosion issues related to electrical parts such as cables, connectors etc.
- Corrosion of battery systems
- Development of new components for electric vehicles (Fuel cells design, corrosion resistance of bipolar plates, solar roof for battery charge...)

**[Szala, Elizabeth, Chair WP17: Automotive corrosion](#)
[Rajan Ambat, Chair WP23: Corrosion reliability of electronics](#)**

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Expected duration: 1/2 day; expected audience: 70-80 attendees.