

PLENARY TALK : Lubricants in electromobility - tribological requirements & challenges

Thursday 23 October 2025 09:00 (30 minutes)

The rapid growth of electric mobility introduces unique challenges for lubricants, distinct from those in internal combustion engines. Key requirements include electrical compatibility to prevent short circuits, superior thermal management to handle heat generated by batteries and motors, and material compatibility with plastics and seals. Lubricants must also address noise, vibration, and harshness (NVH) concerns due to quieter powertrains, while offering durability under extreme operating conditions such as high speeds and temperatures. Extended oxidation resistance and low-viscosity formulations are essential to enhance efficiency and range. Additionally, water resistance and environmental sustainability are becoming increasingly important. Meeting these demands requires innovative lubricant technologies tailored for the evolving needs of electric vehicle systems.

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Session Classification: Electrical and energy systems

Track Classification: Recent research topics