Special Issue

Tribology of Electric Vehicles

Message from the Guest Editors

The automotive industry's shift to electrification presents new tribology challenges. Although the number of moving parts in battery electric vehicles (BEVs) has reduced significantly compared to internal combustion engine vehicles (ICEs), tribological concerns facing BEVs go beyond ICEs. BEVs are heavier, placing more load on wheel bearings and tires. Driveline fluids, historically made to protect gears from scuffing and pitting and provide traction characteristics for clutches, now operate at increased rotational speeds, in an environment with stray electric currents, and may act as a coolant in direct contact with the motor and inverter. They must also continue to protect gears from pitting and scuffing. These challenging requirements have created a need for new base fluids and additives. Traditional ICE fluid test methods are generally not suitable for understanding the behavior of EV fluids. Research has shown the presence of electric current influences friction and wear as well as fluid properties. This collection of manuscripts will present approaches to studying EV fluids and greases. Test method development, initial findings, and thoughtful discussions will be presented.

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About the Journal

Message from the Editor-in-Chief

Friction, wear, and lubrication are tribological phenomena that govern the behavior of interacting surfaces in a wide range of machine components. Understanding the physical and chemical nature of these phenomena is critical to achieving long component lifetime and economical operation. Research in the field of tribology is highly interdisciplinary, and encompasses the fields of physics, chemistry, engineering, and mathematical modeling. *Lubricants* invites contributions on new advances in all areas of tribology for publication as peer-reviewed research articles, reviews of current research, letters, and communications. We are committed to providing timely reviews of all articles submitted. Please consider sharing your work with the scientific community through publication in *Lubricants.*

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