

Special Issue

Tribology in Transmission Systems

Message from the Guest Editor

The transmission system plays a central role in modern mechanical equipment. During power transfer, components such as bearings, gears, and pistons experience complex interfacial phenomena that govern system efficiency, reliability, and service life. A clear understanding of these interfacial tribological behaviors is therefore essential. When operating under demanding conditions such as low rotational speeds or high loads, the tribological response at component interfaces becomes strongly intertwined with the system's dynamic behavior. This strong coupling makes it difficult to model and predict the evolution of interfacial behavior in key transmission elements, posing an ongoing challenge for both research and engineering applications. We aim to develop transient and dynamic tribological models for key transmission components by integrating lubrication, contact mechanics, gear meshing, dynamics, and thermal effects. We also seek deeper insight into micro/nano-scale friction and wear mechanisms and their cross-scale links to macroscopic behavior. Contributions in micro/nanotribology, adhesion, and thin-film studies are warmly welcomed.

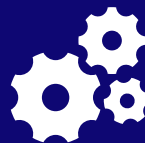
Guest Editor

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Deadline for manuscript submissions

1 December 2026



Machines

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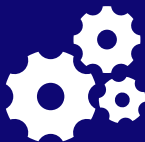


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