



Tribological Research on Transmission Systems

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Deadline for manuscript
submissions:

31 December 2024

Message from the Guest Editors

Dear Colleagues,

Gears, bearings, splines and many other mechanical transmission components accomplish their functions through the contact between tribological pairs, which inevitably brings damage to their surfaces and likely causes the premature failure of systems. On the one hand, some local areas may be extremely pressurized, especially when the curvatures are not well-matched with improperly machined roughness. The topography, however, is constantly reshaped during the wear process with the initially concentrated stress released. On the other hand, damage accumulates as a result of cyclic stress, and micro-cracking is possibly nucleated if the material cannot resist any more damage and then rapidly propagates to fracture the structure. There exists comprehensive competition among different failure modes, and some specific methods have been proposed to locate the faults and describe the interactions between the dominant ones and the other. Still, further efforts are encouraged in this special field to improve the tribological behaviors of transmission systems. All relevant articles are welcomed to enrich the community.

