

Special Issue

Advances in Boundary Lubrication

Message from the Guest Editor

In machine elements, rough surface contacts are often not dry and are lubricated by thin boundary films. The surface roughness effect could be significantly reduced with advanced precision engineering. Hence, thin boundary lubricant films remain the last barrier preventing direct metal-to-metal interaction. Such interactions could lead to an undesirable drop in machine element efficiencies. To prevent this, the boundary lubrication performance can be enhanced by introducing suitable additives that could adsorb onto the surface to form thin protective films. The additives often involve molecules with active boundary elements or nanoparticles that could impart solid lubrication at a molecular level. Besides, the additives must be relevant to the application. Thus, it is essential to elucidate the effect of boundary lubricant addition and the mechanisms that give rise to boundary lubrication. This Special Issue intends to share advances in the design/synthesis of additives, characterization, optimization, and other novel aspects in boundary lubrication. It covers studies involving the adoption of advanced and green materials and elucidating their boundary lubrication mechanisms.

Guest Editor

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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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