Special Issue

Laser Surface Treatments for Tribological Applications

Message from the Guest Editors

The Special Issue on Laser Surface Treatments for Tribological Application focuses on the advancements and innovative applications of laser technologies to improve the tribological performance of materials. Tribology—the study of friction, wear, and lubrication—is critical in mechanical systems, and laser surface treatments have emerged as powerful tools to enhance material surface properties without compromising bulk characteristics. [...] These treatments aim to reduce friction, minimize wear, and improve load-bearing capacity and lubrication behavior. The Special Issue invites contributions that explore the mechanisms, modeling, and performance outcomes of various laser treatments across a range of materials and industrial applications, such as in automotive, aerospace, biomedical, and manufacturing sectors. Emphasis is placed on experimental studies, theoretical analyses, and simulation approaches that advance the understanding of laser-material interaction and its tribological implications. The issue also encourages work on the integration of laser treatment with coatings or lubricants, and the sustainability aspects of laser-based surface engineering.

Guest Editors

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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.*

Editor-in-Chief

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