



lubricants

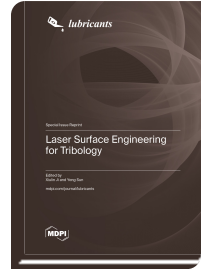


Special Issue Reprint

Laser Surface Engineering for Tribology

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Tribology grapples with diverse challenges, seeking to minimize friction and wear, and to advance the energy efficiency and sustainability of machinery. Laser surface engineering emerges as a highly effective solution with which to tackle these challenges. Recent advancements in this field, including techniques like laser texture, laser deposition, laser cladding, and laser modification, have found widespread applications in tribology. Surface-strengthening coatings, prepared via laser manufacturing, stand out as one of the most efficient strategies to mitigate tribological issues. The laser processing-related techniques either alter the surface texture or create a new film, thereby enhancing the mechanical, physical, and chemical properties of the contact surfaces. These innovations have seamlessly integrated into various industrial applications. This comprehensive reprint encompasses surface texturing, laser processing, and post-machining. Various metals, such as cast iron, steel, high-entropy alloy, and Ti-based, Cu-based, Al-based, and Ni-based alloys, are explored in this reprint, with a dedicated focus on leveraging laser surface engineering for tribological enhancements. In the pursuit of ongoing advancements in this field, contributors participate in this reprint, encompassing the domains of laser surface engineering and tribology, in order to delve into and share their insights. We anticipate that this reprint will draw attention to key research trends and state-of-the-art developments in laser surface engineering for tribology.



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