

Special Issue

Surface Integrity and Functional Performance Induced by Hybrid Processing of Metallic Alloys

Message from the Guest Editor

As part of the product quality, Surface Integrity (SI) is a critical determinant of component functional performance and lifespan, such as fatigue life, wear resistance, and corrosion resistance. HMPs, combining additive and subtractive methods or surface modification techniques, introduce challenges due to the complex interaction between these loads. In addition, Machine Learning and other Artificial Intelligence algorithms can improve the performance of these processes and the SI of the produced mechanical components.

In this context, it is a pleasure to announce a new Special Issue of *Metals* devoted to SI in HMPs. The SI can have detrimental or beneficial effects on the mechanical behavior of metallic components made by AM and their evaluation, prediction/modeling and control in engineering materials assume, therefore, particular importance for the overall development of the manufacturing process. Advancements in measurement techniques, modeling and prediction of SI and new developments on the understanding of the relationship between SI and the functional performance of mechanical components are, therefore, of great interest for this Special Issue of *Metals*.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editor-in-Chief

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