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Laser Surface Treatment of Metals and Alloys

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Message from the Guest Editors

The processing of materials using lasers has grown continuously thanks to the decrease in the price of lasers, a greater understanding of the phenomena involved, and the need to treat new metallic alloys. In general, laser surface treatments (LST) have clear advantages over traditional processes, such as automation and reproducibility. Unsurprisingly, LST involves the largest number of laser workstations sold in the world.

The present issue is intended to offer readers a current and innovative perspective on LST processes, including (but not limited to):

- Advances in engraving and marking;
- Surface hardening using lasers;
- Deformation, residual stresses, and fracture in laser processed materials;
- Effects of laser remelting on metallic surfaces;
- Investigations about cladding on surfaces;
- Cutting-edge athermal processing;
- Microstructural changes in metal alloys by exposure to laser beam.

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Message from the Editorial Board

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.

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