Special Issue

Experimental, Modeling, Simulation and Optimization of Laser Processing in Metallic Materials

Message from the Guest Editors

As industrial development urgently requires improvements in efficiency, environmental protection and automation, the laser processing of metallic materials has been rapidly popularized in many fields of the manufacturing industry. Laser processing is a complex physical and chemical metallurgy process that involves laser beam, molten pool, keyholes, melting, evaporation, etc. Process monitoring and quality control are important aspects in the research and development of laser processing and are prerequisites for obtaining high-quality welds, while numerical simulation technology can describe many complex physical phenomena of laser processing of metallic materials. The combination of simulation and experiment has the effect of experimental verification of process models and model optimization by experiments, representing an effective means of research in the field of laser materials processing.

Guest Editors

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About the Journal

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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