Special Issue

Advanced Surface Modification Technologies

Message from the Guest Editors

Advanced surface modification technologies, such as laser peening, ultrasonic nanocrystal surface modification (UNSM), cavitation or water jet peening, light plasticity burnishing (LPB), ultrasonic peening, etc., are recently developed technologies that could improve mechanical properties and performance significantly. Extreme performance in terms of wear/friction, corrosion/stress corrosion cracking (SCC), fatigue, rolling contact fatigue, fretting wear, etc., in the aircraft industry, nuclear power industry, biomedical industry, etc., has been achieved by utilizing these technologies. We invite researchers from around the world to submit original research papers and review articles on the typical advanced surface modification technology and on the improvement in mechanical properties and performance. Moreover, research on the numerical simulation analysis of those surface modifications techniques is also good due to the continuously increasing demands on advanced computer technology. Successful applications in industry, especially to additive manufacturing products, are very welcome.

Guest Editors

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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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