

Special Issue

Surface Properties and Corrosion Behavior of Metals after Shot Peening

Message from the Guest Editors

As one of the superior candidates, shot peening has long been employed to enhance the surface properties of metals and alloys, such as their fatigue and wear resistance, by introducing strain hardening, a refined microstructure and compressive residual stress. This technique is also characterized by inexpensiveness, effectiveness and excellent applicability in the processing of complex geometric parts.

In the majority of cases, shot peening unconsciously employs tailored parameters in order to enhance the surface properties, particularly the corrosion resistance; this is because the concomitant higher roughness and micro non-propagating cracks are generally regarded as unfavorable factors. Furthermore, research focused on the responses of shot-peened components to special working conditions, such as erosion-corrosion, jet slurry corrosive wear and other multiple loading cases, and the underlying mechanisms is in urgent need of clarification or consensus.

Based on these considerations, this Special Issue aims to elucidate the recent research findings regarding the surface properties and corrosion behaviors of metals when applying shot peening treatment.

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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