



metals



Special Issue Reprint

Advances in Low-Temperature Nitriding and Carburizing of Stainless Steels and Metallic Materials: Formation and Properties

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Surface engineering techniques are currently used to overcome the limitations of metal alloys and improve their surface hardness, tribological properties, fatigue resistance, and corrosion resistance in specific environments. From this perspective, stainless steels have represented a challenge for many years, since nitriding and carburizing treatments, as carried out on low-alloy steels or tool steel, cannot be directly applied to steel of these grades. The drawbacks of “traditional” nitriding and carburizing processes can be overcome by “low-temperature” thermochemical treatments, in which interstitial atoms (nitrogen, carbon) can diffuse freely, while the diffusion of substitutional atoms is significantly slowed down.

The purpose of this Special Issue is to gather original research and critical review articles on recent advances in all aspects of low-temperature thermochemical treatments using nitrogen and/or carbon applied to stainless steels and ferrous and non-ferrous alloys.



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