Special Issue

Novel Materials and Techniques for Dental Implants

Message from the Guest Editor

Advanced materials (e.g.,: ceramic, metallic, and metallic alloy materials), post-processing techniques (e.g., anodizing, physical, or chemical vapor deposition, etc.), and/or surface modification strategies (e.g., chemical etching, laser patterning, etc.) have gained interest within the field of biomedical applications over the last years, particularly for dental implants. In this regard, an improved knowledge of these advanced materials, as well as the post-treatment surfaces of them and the correlation between the microstructure, corrosion resistance, and biocompatibility properties will lead to hierarchical design materials, ranging across length scales over several orders of magnitude (i.e., from nanometers to hundreds of centimeters), depending the post-processing technique used. Based on these considerations, this Special Issue aims to provide a critical overview of the current post-processing techniques and surface modification strategies for advanced materials, investigating and comparing the changes produced by these treatments in terms of microstructure, aging, and corrosion resistance, and the biological performance for dental implants.

Guest Editor

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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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