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Advances in Metal-Based Biomedical Materials: Composition Design and Surface Modification

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Message from the Guest Editor

Metal-based biomedical materials are an important type of biomaterials in clinical applications. The selection of suitable biomaterials depends on their properties, which include biocompatibility, bio-functionality, tribological properties, mechanical properties and surface bioactivity. Composition design plays a very important role in the development of metal-based biomedical materials. For instance, chromium used in stainless steel could improve corrosion resistance. Silver and copper are normally alloying elements with regard to the development of antibacterial alloys, whereas nickel can cause allergic reactions. In addition, the surface modification of metal alloys can change the surface physical and chemical properties, which in turn influences the surface compatibility and bioactivity.

The submissions to this Special Issue should focus on variations in properties and influencing mechanisms according to different composition designs or surface modifications. This Special Issue aims to show readers the most up-to-date research on composition design and surface modifications in the development of metal-based biomaterials.

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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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