



Biomedical Applications of NiTi Alloys

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Message from the Guest Editor

NiTi for biomedical applications have been widely used since the last 40 years especially for their unique properties. Different applications are now present in the market as maxillofacial and dental implants, stents, bone fracture fixation, orthodontic wires and artificial muscles among others.

This issue will discuss how the processing technologies can modify the surface and then the biomedical response of the alloy. Different technologies as:

- Additive manufacturing
- Selective laser melting (SLM)
- Anodization
- Nanotechnology
- Surface treatments
- Oxidation
- Ionic implantation

are new approaches to improve the biocompatibility of NiTi alloys.

How these processing technologies will affect the biocompatibility of the alloy is also discussed through in vitro and in vivo assays for cytotoxicity, genotoxicity and tissue ingrowth. The last strategies to improve surface functionalization of NiTi implants are collected.





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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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