Special Issue

Failure Analysis of Biometals

Message from the Guest Editor

Metallic biomaterials are widely used for the manufacture of medical implants, because of their favourable combination of properties including high strength, fracture toughness, biocompatibility, wear and corrosion resistance. Additionally, they can be fabricated using well-established techniques (such as casting and forging), and recently, additive manufacturing to produce complex and customised implants. Due to the significant consequences of implant material failure, in terms of both personal and financial burden, failure analysis of biometals has been always of paramount importance in order to understand the failure mechanisms and implement suitable solutions with the aim to improve the longevity of implants in the body. This Special Issue aims to present the latest developments in the area of biometals failure. The scope includes (but is not limited to): Advanced biometals, microstructural evaluation, mechanical properties, failure/degradation analysis, fracture, fatigue, wear, corrosion, in vitro and in vivo assessments, implant retrieval studies, biocompatibility assessments, porous biometals, surface modifications and simulations.

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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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