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Ceramic Reinforced Metal Matrix Nanocomposites

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Deadline for manuscript submissions:
closed (31 August 2022)

Message from the Guest Editor

Nanoparticle reinforced metal matrix composites provide high strength and can be used to produce light-weight components. Even small amounts of nanoparticles can improve the properties of the matrix metal in a remarkable way by means of Hall–Petch or Orowan strengthening. Nevertheless, the most accurate requirements for the choices of suitable matrix, reinforcement, and techniques (processing and post-processing) are not completely defined. It is very interesting to deeply investigate the connection between the features, constituents, including the matrix, reinforcement, interphases, and also production techniques.

The aim of this Special Issue is to cover the recent progress and new developments regarding all aspects of ceramic-reinforced metal matrix nanocomposites. Original articles and review papers will deal with the following themes:

- processing and characterization of any type of ceramics and matrix metals
- microstructural evaluation and physical and structural characterization
- optimization of properties and processes including calculations
- simulation of properties over length-scales
- novel applications of ceramic-reinforced metal matrix nanocomposites

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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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Journal Rank: JCR - Q2 (*Metallurgy and Metallurgical Engineering*) / CiteScore - Q1 (Metals and Alloys)

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