Special Issue

Intelligent Materials and Structures

Message from the Guest Editors

Intelligent materials are able to alter their response and properties through the multiphysics coupling such as mechanical, temperature, electrical and magnetic fields. Shape memory alloys, magnetostrictive materials, piezoelectric materials, are among the most usual intelligent materials. Due to their remarkable characteristics, intelligent materials have attracted the attention of several researchers and industries in recent years, having been used as actuators and sensors in several areas such as aerospace, automotive, bioengineering, oil and gas exploration and robotics. The characterization and modeling of intelligent materials present several challenges due to their complex behavior associated with the coupling between different physical fields. Therefore, these research activities are relevant to permit the development of new applications. This Special Issue aims to address the lasted research in the field of intelligent materials. Topics addressed in this Special Issue may include but are not limited to: characterization; modeling; applications, morphing, energy harvesting, smart composites, structural health monitoring, nonlinear vibration and wearable technology.

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Deadline for manuscript submissions

closed (31 December 2022)

Metals

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Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/78005

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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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