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Recent Scientific Developments in Additively Manufactured Materials—Damage, Fracture, Fatigue, and Failure Assessments

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Message from the Guest Editors

Dear Colleagues,

The expansion of additive manufacturing (AM) technologies started approximately three decades ago with the main application of AM in so-called rapid prototyping. The progress in hardware and software extended the use of AM, and today, these technologies are widely used for the production of components delivered to end-users. Many metallic parts are made utilizing AM technologies and are used today in machines, cars, ships, even airplanes. However, experimental results reveal that the mechanical properties of these parts are not always correlated to properties obtained with specimens; this is the main reason AM is not a widely adopted technology for the production of critical metallic components. Therefore, it is necessary to improve the damage tolerance design of AM metallic parts. To make forecasts about the fatigue life of such components exposed to service loads, extensive research followed by characterization of used materials must be carried out. This Special Issue aims to present articles on recent research and developments in the field of damage and failure analysis of AM materials.

To find more information, please click this link.

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Message from the Editor-in-Chief

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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