Special Issue

Online and Offline Diagnosis of Welding Defects on Metallic Materials

Message from the Guest Editors

Welded metal structures have been extensively employed in various fields, such as the construction, automotive, aerospace, railway, petrochemical, mechanical and electrical industries. Due to uncontrollable environmental conditions and the number of variables involved in the welding process, welding defects are inevitable. Verifying the quality of welded joints in order to ensure structural integrity and safety is crucial, particularly in critical applications in which weld failure can be catastrophic. Destructive and non-destructive testing techniques are those most often employed in order to inspect the quality of metal welds. Among these, non-destructive testing methods, including radiographic, ultrasonic, thermal, optical, magnetic particle and liquid penetrant testing, are widely used. Extensive research is currently being conducted worldwide into both the on-line and off-line diagnosis of weld defects, and this deserves our unreserved attention. Articles that reflect experimental studies and numerical analyses, and illustrate advancements in this area, are particularly welcome.

Guest Editors

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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.

Editor-in-Chief

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