

Special Issue

Novel Joining Methods for Titanium and Nickel Superalloys

Message from the Guest Editor

Titanium alloys and nickel superalloys are integral to the efficient operation of modern gas turbines. Gas turbine component designs are continuously developing, with more complex parts being introduced into service.

Along with increased performance, there can be drawbacks that come with implementing complex geometrical components, such as an increased difficulty in repairing these components. Indeed, the ability to repair engine components provides engine manufacturers with a significant opportunity to reduce costs through reduced material replacement and a reduction in time off-wing. Conventional joining methods, such as friction welding, have proved difficult for new generation nickel-based superalloys; therefore, there is much interest in emerging and novel joining technologies for these alloys. In this Special Issue, we aim to provide a wide set of articles covering novel joining and repair methods for nickel and titanium alloys. It is hoped that this open access issue will provide a place for readers to familiarize themselves with both conventional and more innovative joining methods frequently used for the joining and repair of aero-engine alloys.

Guest Editor

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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.

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