Special Issue

Welding Metallurgy and Weldability of Superalloys

Message from the Guest Editor

The components, which utilize superalloys, are usually referred to as the most demanding and where welding of these most often plays an essential role, not only in manufacturing, but also in repair and re-manufacturing. It is therefore of utmost importance that the welds used in the design are of suitable quality to account for the demanding environment. Numerous challenges exist to welding these alloys and caution needs to be exercised in order to avoid problems such as hot cracking or strain age cracking. Nevertheless, the available weldability testing methods play a vital role in the fundamental study of the root cause for, for example, weld cracking, which can be further enhanced by characterization as well as simulation. This Special Issue intends to offer a dedicated platform for sharing new findings, communicating views about the accomplishments and future directions in superalloy welding and weldability testing research. We welcome reviews and original research articles in the areas of welding metallurgy, weldability, and associated topics of superalloys, achieved through either experimental techniques or theoretical calculations.

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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