Special Issue

Microstructural Evolution and Mechanical Properties of Weld Metals

Message from the Guest Editors

Welding is unavoidable when joining engineering components. The microstructure and mechanical properties of the original materials can be altered by the heat input introduced during the welding process. Furthermore, high levels of residual stress can also be generated during cooling of the weldment, leading to the severe deformation of the components. The combined effect of heat and stress on the microstructural evolution and the change in mechanical properties of the weldment is very complicated, as it involves solidification, precipitation, recrystallization, grain growth, plastic deformation and phase transformation, leading to a component with completely different characteristics compared to the original substrate.

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Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

Editor-in-Chief

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