Special Issue

Microstructure and Properties of Superalloys

Message from the Guest Editors

Single crystal (SX) superalloys represent one of the most important classes of materials for high-temperature applications. Nickel- and Cobalt-base superalloys are the most common candidates for application in the hot parts of gas turbines, where they are often used as polycrystalline material for disks or as single crystals for turbine blades. The microstructure, which is established by precisely controlled casting, solidification and heat treatment procedures, governs the mechanical performance at elevated temperatures. Manufacturing of SX superalloys traditionally involves casting processes such as Bridgman single crystal growth. The effects of advanced processing techniques on mechanical properties are the subject of current research. Advances in quantitative microscopy and microstructural analysis have led to a better understanding of elementary microstructural evolution processes and high-temperature plasticity. This Special Issue on “Microstructure and Properties of Superalloys” addresses recent research results on the relationship between manufacturing, microstructure, and properties, with a special focus on novel characterization methods.

Guest Editors

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Message from the Editor-in-Chief

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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