Special Issue

Innovations and Future Trends in Eutectic Alloys

Message from the Guest Editors

The eutectic is a structure known by cooperative growth, in which two or more phases grow, evolving either regular (e.g., lamellae) or irregular microstructures. Under certain conditions and in some alloys, these phases can precipitate at different stages, resulting in what is known as a divorced eutectic. Present in several alloys, eutectic structures play a significant role in improving mechanical behavior and fluidity and lowering melting temperatures. For this reason, eutectic alloys have a broad range of applications, including structural alloys, filler metals, thermal energy storage materials, and others. More recently, eutectic and near-eutectic alloys have gained attention for the development of new high-entropy alloys, expanding their potential applications even further. In view of expanding on research in this area and disclosing new findings, we are pleased to invite you to publish original contributions focused on the design and characterization of innovative materials, the plastic formation of eutectic alloys, and the latest applications.

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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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