

## Special Issue

# Heat Treatment, Microstructures, and Mechanical Properties of Metallic Materials

### Message from the Guest Editors

Heat treatment is the foundation of modern manufacturing; it improves the properties of metal materials by changing their microstructure. Almost all important mechanical components require heat treatment to improve their performance and enhance their service safety. Advancements in heat treatment equipment and technology have greatly promoted the development of advanced metal materials, laying the foundation for the upgrading and development of future manufacturing industries. The scope of this Special Issue includes the following: progress in heat treatment, the relationship between heat treatment processes, microstructures and their properties, the heat treatment of new materials, the application of heat treatment in advanced metal preparation, and the relationship between heat treatment and the environment. Heat treatment is the soul of mechanical components, providing infinite possibilities for improving and optimizing the performance of metal materials. We aim to provide a platform where researchers can learn about the research and development of heat treatment and create space for the performance and quality improvement of advanced equipment in the future.

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### Guest Editors

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### Deadline for manuscript submissions

closed (31 January 2026)



## Metals

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## About the Journal

### Message from the Editor-in-Chief

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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### Editor-in-Chief

Prof. Dr. Yong Zhang

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