Special Issue

Symmetry Studies in Metals & Alloys

Message from the Guest Editors

Symmetry is a fundamental principle in the study of crystalline solids, particularly metals and alloys. Most metals crystallize into highly symmetric and densely packed structures. These structures are defined by distinct symmetry elements that govern the periodic arrangement of atoms within the lattice. Therefore, symmetry not only dictates the formation of crystallographic phases at the microstructural level but also exerts a strong influence on mechanical strength, texture, deformation response, and atomic diffusivity.

Characterization methods based on crystallographic symmetry have been widely used in recent years for the experimental analysis of metallic materials. Techniques such as X-ray diffraction (XRD) and electron backscatter diffraction (EBSD) rely on symmetry to determine crystallographic orientations, phase distributions, and texture evolution. These methods have contributed considerably to clarifying processing–structure–property relationships. Symmetry considerations aid in interpreting anisotropic plasticity, especially in alloys subjected to thermomechanical processing.

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About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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