



Microstructural Mechanisms of Damage Accumulation in Technical Alloys

Guest Editor:

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Message from the Guest Editor

The mechanisms of damage and failure of metals under mechanical or combined loads have been widely studied, and high strength materials have been developed. Under tribological loads, chemical and microstructural alterations occur in the material, and surface properties under cyclic and multiaxial stress fields are difficult to determine or predict. Techniques of severe plastic deformation, on the other hand, allow the introduction of extremely high strains, typically by shear, without inducing defects through the superposition of hydrostatic compressive stress. Understanding microstructural mechanisms of damage and strain accumulation, but also healing effects through recovery or recrystallization, allows us to understand ways in which materials may be loaded well beyond their current range of application—or clarifies in which load situations conventional material properties will overestimate a material's performance in a given load situation.

This Special Issue focuses on research aiming at the understanding of fundamental mechanisms of materials' reactions to potentially damaging mechanical load conditions.





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Message from the Editor-in-Chief

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