



metals



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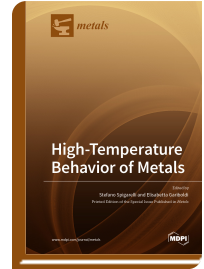
High-Temperature Behavior of Metals

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The design of new alloys or metal-based composites as well as the optimization of any of the processes involved in high-temperature deformation must take into account the characterization and/or modeling of the high-temperature mechanical responses of the material. This is not a new concept. Nevertheless, there is still much to be done both in terms of data accumulation, specifically for innovative materials, and in terms of material modeling for proper process management, specifically when innovative deformation processes, including more complex time and temperature combinations, are considered. Microstructural changes induced by the process can also severely affect both the further processability of the material as well as its final properties (structural or functional). Similar considerations hold in the case of conventional or innovative metallic materials, where high-temperature deformation occurs due to high-temperature service of the structural components. Thus, knowledge of the effects on the initial microstructure as well as the microstructural changes taking place during in-service deformation are of paramount importance for the optimization of high-temperature structural alloys.

This book ‘High-Temperature Behavior of Metals’ contains contributions dealing with a wide range of metallic materials, illustrating some of the most recent and interesting advances in the field of the high-temperature structural behavior of metallic materials.



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