



Advances in Quench and Tempered Steels

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Message from the Guest Editor

When the Q&P process is preceded by thermomechanical rolling comprising controlled rolling in the recrystallization regime, followed by controlled rolling in the no-recrystallization regime, it results in enhanced dislocation density and finer packets and laths of martensite in the transformed microstructure. This leads to enhanced strengthening. To meet the growing challenges, a new optimal Q&P design approach with suitable chemical compositions must be continuously developed. A detailed understanding of the physical metallurgy, and mechanical properties of different-grade steels obtained through different Q&P/Q&T process conditions will be greatly helpful to steel engineers.

This Special Issue is dedicated to the alloy design, microstructure, and mechanical properties optimization through a novel process design approach of different-grade high-strength steels such as low-alloy TRIP-aided steels, quenching and partitioning steels, carbide-free bainitic steels, medium Mn steels, etc. Review and research articles on the recent progress on advance rapid tempering process and associated micromechanisms are also highly welcome for this issue.





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Message from the Editorial Board

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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