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Formation and Behavior of Metastable Austenite in Advanced High Strength Steels

Guest Editor:

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Message from the Guest Editor

The historical development of advanced high strength steels (AHHS) includes 1st, 2nd and 3rd generation AHHS. The 1st generation basically includes low-alloy steels with ferritic matrix and multiphase microstructure. Low-alloy TRIP steels, which belong to the 1st generation, are multiphase steels containing metastable retained austenite, exhibiting the TRIP effect. The 2nd generation AHHS steels include high-alloy steels containing a high amount of manganese. These steels exhibit a fully-austenitic microstructure and the deformation-induced $\gamma \rightarrow \varepsilon$ and $\varepsilon \rightarrow \alpha'$ transformations influence their mechanical behavior. The 3rd generation AHHS steels include steels with mechanical properties filling the gap between the 1st and 2nd generations. Quench & Partitioning (Q&P) and Medium-Mn steels are examples of 3rd generation AHHS steels.

For further reading, please follow the link to the Special Issue Website at:

http://www.mdpi.com/journal/materials/special_issues/austenite_high_strength_steels

Prof. Gregory N. Haidemenopoulos
Guest Editor

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