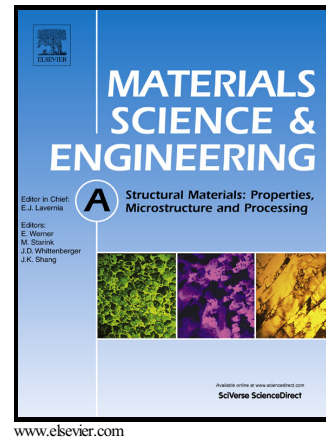


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**FACTORS INFLUENCING THE AUSTENITE STABILITY DURING TENSILE TESTING
OF QUENCHING AND PARTITIONING STEEL DETERMINED VIA IN-SITU
ELECTRON BACKSCATTER DIFFRACTION**

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ABSTRACT

The effect of the microstructural characteristics of retained austenite on its transformation stability in steel after *Quenching and Partitioning* (Q&P) was studied via interrupted tensile tests and Electron Backscatter Diffraction measurements on a pre-determined zone of a micro-tensile test sample. The evolution of the retained austenite fraction was obtained as a function of the plastic strain. The dependence of the austenite transformation stability on the corresponding grain size, morphology, and local crystallographic orientation was discussed. Furthermore, the importance of the parameters on the austenite stability was analysed and it was shown that the austenite grains rotated, in addition to being transformed, constituting therefore an additional contribution to the ductility of Q&P steel.

Key-words: “Quenching and Partitioning”, Retained Austenite Stability, In-situ Electron Backscatter Diffraction (EBSD), Micro-tensile Deformation

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