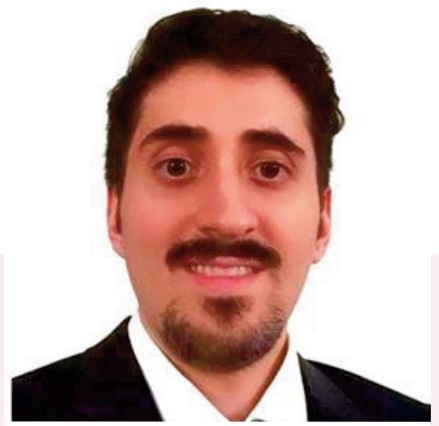


Speaker 1



Pedram Dastur

Development of a segregation - neutralised dual phase steel for improved formability

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ABSTRACT:

The concept of changing the distribution of martensite from a banded to a non-banded structure has been used to improve the formability of dual-phase (DP) steels. In this regard, the effect of manganese segregation on the second phase distribution has been neutralized by redesigning the steel composition compare to conventional DP grades: termed as 'segregation-neutralised (SN)' DP steel. The effect of the distribution of the second phase on the anisotropy of mechanical properties (tensile strength and elongation) has been determined for the hot rolled condition (ferrite+pearlite microstructure) and the final product (ferrite+martensite) using tensile testing in the rolling, transverse and 45° orientations. In addition, the effect of the martensite distribution on the local formability has also been assessed using notched tensile samples with observation of void formation during in-situ tensile testing in the SEM.

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