

عنوان مقاله:

HIGH TEMPERATURE TENSILE PROPERTIES OF NEW FE-CR-MN DEVELOPED STEEL

محل انتشار:

مجله علم مواد و مهندسی ایران، دوره 14، شماره 1 (سال: 1395)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Nowadays, Ni-free austenitic stainless steels are being developed rapidly and high price of nickel is one of the most important motivations for this development. At present research a new FeCrMn steel was designed and produced based on Fe-Cr-Mn-C system. Comparative studies on microstructure and high temperature mechanical properties of new steel and AISI 316 steel were done. The results showed that new FeCrMn developed steel has single austenite phase microstructure, and its tensile strength and toughness were higher than those of 316 steel at 25, 200, 350 and 500°C. In contrast with 316 steel, the new FeCrMn steel did not show strain induced transformation and dynamic strain aging phenomena during tensile tests that represented higher austenite stability of new developed steel. Lower density and higher strength of the new steel caused higher specific strength in comparison with the 316 one that can be considered as an important advantage in structural applications but in less corrosive environment

کلمات کلیدی:

FeCrMn austenitic stainless steel, high temperature tension properties, strength and toughness, strain induced transformation, dynamic strain aging

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