

عنوان مقاله:

Effect of melting and casting crucible on the microstructure and mechanical properties of Ti-6Al-4V alloy

محل انتشار:

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خلاصه مقاله:

Titanium is very active element that react with all known refractories in liquid condition. Therefore election of suitable crucible for casting of titanium is very important. In this research the effect of melting and casting crucible on the microstructure and mechanical properties of Ti-6Al-4V alloy was investigated. For this reason, the billet of Ti-6Al-4V alloy with clear chemical composition was melted and casted in the alumina, zirconia and geraphit crucibles in the vaccum induction furnace and one thermomechanical treatment was applied on the casting alloys. Then microstructure and mechanical properties of alloys was compared. Results showed that alumina is not suitable crucible for casting of titanium as a result of drastic reaction with melt. Product of casting in zirconia crucible has very less plasticity due to existence of oxygen. Product of casting in geraphit crucible illustrate suitable tensile properties however a lot of carbonitrid phase was exist in structure. Therefore geraphit is adequate curcible for casting of Ti-6Al-4V alloy.

کلمات کلیدی:

Ti-6Al-4V alloy, Vaccum induction furnace, Casting crucible

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