عنوان مقاله:

The effect of Nb addition on nanostructured NiTi intermetallic compound synthesized by mechanical alloying

محل انتشار:

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خلاصه مقاله:

In this study the mechanical alloying behavior and phase evolution in Ni50Ti25Nb25 ternary system were investigated. The milling process was carried out at room temperature in a planetary ball mill under Ar atmosphere. The as-milled powders were then heat-treated at 900°C for 1 h. X-ray diffraction (XRD), scanning electron microscopy (SEM), were used to characterize the milled and heat-treated powders. The results showed that mechanical alloying led to the formation of an amorphous phase. After heat treatment three intermetallic compounds, Ni3Ti, NiTi2 and NiNb were formed. This results indicate that a hybride composite can be synthesized using MA process followed by annealing treatment. The grain size of NiNb composite after heat treatment was measured by Williamson–Hall equation. The grain size of NiNb compound was estimated 140 nm.

کلمات کلیدی:

Mechanical alloying; intermetallic compounds; NiTiNb ternary system; Nanocrystalline

لینک ثابت مقاله در پایگاه سیویلیکا: