عنوان مقاله:

The Effect of Heat Treatment on the Microstructural and Superelastic Behavior of NiTi Alloy with 58.5 wt. % Ni

محل انتشار:

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خلاصه مقاله:

The effect of aging process on hardness as well as the superelastic behavior of NiTi shape memory alloy with 58.5 wt. % Ni has been investigated in this paper. The aging process has been performed at different temperatures ranging from 400 oC to 800oC and for various exposure times from 30 min to 8 hours. The results showed an increase in hardness in the temperature range from 400 oC to 500 oC and then a decrease occurs. At constant temperature with prolonged aging time a gradual increase of hardness occurs. SEM observations showed that there is some precipitation in specimens aged from 600 oC to 800 oC. The decrease of hardness can be due to an increase in precipitate size. The superelastisity investigation at 25 and 60 oC showed that the maximum superelastisit results are related to specimens aged at 400 oC. The superelastisity properties of NiTi were discussed in terms of hardness and .microstructure

کلمات کلیدی:

Shape Memory Alloy, Nitinol, heat treatment, Superelasticity, Structural Properties