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**INFLUENCE OF STRAIN AMPLITUDE ON THE FUNCTIONAL PROPERTIES AND AGEING AT ROOM TEMPERATURE OF A SUPERELASTIC NITI ALLOY**

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The effects of strain amplitude variation on the functional properties of a superelastic NiTi wire were investigated in terms of critical stress to induce martensite, accumulated residual strain, dissipated energy, lower plateau stress, and stress at maximum strain. To this end, wire specimens were subjected to training by pseudoelastic cycling, being mechanically strained up to strain amplitudes of 4, 6, 8, 10, 12 and 14%. A total of 20 cycles were performed at each condition, at room temperature and strain rate of 10-3s-1. In order to assess if the wire was able to maintain its functional properties after training, samples subjected to cycling at 4, 8, 12 and 14% strain amplitudes were aged at room temperature and retested. In general, the results showed that functional properties tend to stabilize faster when the alloy is subjected to lower strain amplitudes. The reverse transformation plateau decreases and the residual strain increases with increasing strain amplitude, which was associated with higher introduction of dislocations However, it was observed that portion of the functional properties were recovered if aged at room temperature. When compared with the curves at the 20th cycle, the stress-strain loops increased after aging irrespective of training parameters and ageing time. Higher strain amplitudes displayed more significant recoveries, which may be associated with a higher ageing driving force due to the presence of a greater number of crystallographic defects.