

عنوان مقاله:

(Characterization of Constrained Aged Niti Strips for Using In Artificial Muscle Actuators (Technical Note

محل انتشار:

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خلاصه مقاله:

Marvelous bending/straightening effects of two-way shape memory alloy (TWSMA) help their employment in design and manufacturing of new medical appliances. Constrained ageing with bending load scheme can induce two-way shape memory effect (TWSME). Scanning electron microscope (SEM) analysis, electrical resistivity measurement (ERM) and differential scanning calorimetry (DSC) are employed to determine the property change due to flat strip constrained aging. Results show that flat-annealing prior to the aging shifts NiTi transformations temperatures higher. Superelastic behavior of the as-received/flat-annealed/aged samples with more adequate transition temperatures due to biological tissue replacement is studied by three-point flexural tests. Results show that curing changes the transition points of the NiTi strips. These changes affect the shape memory behavior of the NiTi strips embedded within the biocompatible flexible composite segments.

کلمات کلیدی:

Annealing, Constrained Ageing, TWSME, Artificial muscles

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