

IMPROVING PROPERTIES OF SMART NI/TI DENTAL ALLOY

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ABSTRACT

It is well established that Ni/Ti is categorized as a shape memory alloy. They found great interesting application including aerospace, biomedical and so many others. However, there is possibility of corrosion of these alloys in physiological solution and dissolution of toxic Ni-ions. Laser surface treatment technique was adopted in this work. An improvement in Ni-ion dissolution reduction of (310%) was obtained in Nd-YAG laser surface-treated samples. Great enhancement in corrosion resistance of (1549%) also occurred. A substantial improvement in hardness of (368%) was recorded in laser treated samples.

KEYWORDS: NiTi Shape, Nd-YAG, Toxic Ni-Ions