

عنوان مقاله:

Investigation of phase and microstructural features of Ti-6Al-4V extra-low interstitial alloy after thermomechanical process

محل انتشار:

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خلاصه مقاله:

This work is dedicated to discuss the effect of the thermomechanical process on the phase changes, microstructural features and microhardness of a Ti-6Al-4V extra-low interstitial (ELI) alloy, which is commonly used as load bearing biomaterial. Microstructure and phase characterization were studied by scanning electron microscopy (SEM) and X-ray diffraction (XRD). The microstructural and lattice strain during thermomechanical process were characterized thoroughly by different methods of Williamson-Hall and Rietveld method on X-ray Diffraction. Results showed that the microstructure changed significantly due to the forging process and the microhardness was reached the ۳۷۲.۸۳ Hv. Also, the results confirmed considerable regulations in lattice and microstructural features which were directly influenced by the thermomechanical process.

کلمات کلیدی:

Microstructural features, XRD, Ti6Al4V-ELI, Implant, and Thermomechanical Process

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