عنوان مقاله:

Effect of annealing treatment on the microstructure evolution and mechanical properties of commercial purity titanium after processing by equal channel angular pressing

محل انتشار:

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خلاصه مقاله:

In this study the influence of annealing temperature on the microstructural evolution and microhardness of of ECAP-ed CP Ti investigated. It was revealed that after processing by 10 passes ECAP the initial coarse-grained CP-Ti with average grain size of 20 μm was refined to ultrafine grain/nano structure with a mean size of ~200 nm. A good thermal stability of the UFG structure was found below 400 °C, and thereafter recrystallization and grain growth occurred with increasing annealing temperature. The microhardness of ECAP-ed samples showed a sudden drop after annealing at 400 °C, whereas it decreased slightly up to 300 °C. These findings are analyzed in the context of .the changes in the microstructural characteristics induced by annealing treatment

کلمات کلیدی:

Equal channel angular pressing, Titanium, Ultrafine-grained materials, Annealing, Thermal