عنوان مقاله:

Effect of Gas Mixture H2-N2 on Microstructure and Microhardness of Steel 32CDV13 Nitrided by Plasma

محل انتشار:

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خلاصه مقاله:

Nitriding treatments of low alloyed steels can be performed only at relatively low temperatures in order to avoid a decrease in corrosion resistance due to nitride layers formation. These conditions promote the formation of compound layer and diffusion zone, which shows high hardness and good corrosionresistance. In the present paper, the influence of the gas mixture N2-H2 in plasma nitriding process on the microstructural and mechanical characteristics of 32CDV13 steel samples was evaluated. This nuance is used in manufacturing mechanical partsthat are greatly solicited in fatigue as the transmission gearings onthe helicopters' rotors and the rolling used in aeronautics. Plasma nitriding treatments were performed attemperatures in the range 773K for 4h. The modified surface layer of the nitrided samples consists mainly of the γ' and ε phases, according to metallographic technique analysis, it seems to be essentially a modification of the austenite matrix. High hardness values are observed in the modified layer with a steep decrease to matrix values

کلمات کلیدی:

Ion Nitriding,Steel 32CDV13,Microstructure,Microhardness