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**Comparison of properties different titanium alloys after plasma electrolyte carburization**

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It describes the results of the modifications of properties and chemical and phase composition surface different titanium alloys (VT-10, VT-22 and VT-6) after plasma electrolyte carburization. Acetone, glycerol, sucrose and ethylene glycol was used as a donor of carbon. Treatment is performed at a temperature of 900°C for 5 minutes. After treatment samples was quenching in the electrolyte. By XRD showed the formation of similar phase composition of the surface layers. In all these cases, the surfaces of all the alloys produced rutile. Just found an increase in microhardness edge of the sample the maximum hardness achieved after saturation with a solution containing glycerol (541 HV50), further decreases in the series of acetone (516 HV50), sucrose (432 HV50) and ethylene glycol (420 HV50). Data given in parentheses are for VT-22 alloy.

There were also identified the coefficient of friction and wear of the mass of the samples after processing. Counter body was carried out and 45 steel, hardened to 55 HRC. Normal load is 312 N and the slide path of 1000 m. As lubricant were used technical means "LITOL". It is found that in all cases treatment reduces the friction coefficient to a range of 0.1 - 0.15, and the mass of wear is reduced from 600 mg to 5 mg.

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**Keywords**

Anode Plasma Electrolysis

Titanium alloy

Friction wear

Carbon diffusion