The laser surface treatment of 3D printed Ti6Al4V samples

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The results of a study of laser surface treatment of Ti-6Al-4V samples obtained using 3D printing are presented. Laser treatment was performed by immersing the sample in water. The thickness of the resulting surface layer after laser treatment was 30-40 microns. It was found that the laser treatment leads to oxidation of Ti-atoms with formation of unstable TiO (Ev=455.1 eV) and Ti2O3 (Eb=457.4 eV) oxides. A comparison is done with literature results associated with surface treatment of the titanium 3D printed products for medical use.