

"Nanotechnology and nanomaterials"

The reactive ion plasma synthesis of functional coatings for implantology

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In the thesis current-voltage characteristics of the magnetron discharge in argon and its oxygen mixtures for target materials of aluminum and tantalum were measured. The optimal technological parameters (voltage and current) for the deposition of protective (Al_2O_3) and electret (Ta_2O_5) coatings were found [1]. The physical, biological and tribology properties of oxide coatings, which are used in implantology, were studied and deposited on a cluster system for etching and reactive synthesis of coatings based on magnetron which is HFI plasma and ion source [2].

1. Zykova A. Corrosion properties of nitride, oxide and multilayer coatings on stainless steel and titanium-based substrates / [A. Zykova, V. Safonov, J. Walkowich, R. Rogowska and S. Yakovin] // Journal of Physics. - 2010. - № 223. p. 1-4.
2. Zykova A. Surface parameters modification by multilayer coatings