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Abstract

Due to their biocorrosion resistance, appropriate mechanical properties and the highest biocompatibility among all the metals, titanium and its alloys have been the most commonly used materials for load-bearing long-term implants for many years. Unfortunately, currently used titanium alloys do not completely fulfil their requirements, which can result in early implant loosening. A number of surface modification methods are being used to reduce the risk of loosening. Of particular note are electrophoretic deposition and electrochemical oxidation methods. By controlling the process parameters of the mentioned techniques, it is possible to obtain thin layers and polymeric, ceramic or composite coatings with the specified properties. The presentation will show the results of coatings, based on chitosan and nanohydroxyapatite with metallic nanoparticles, deposited by electrophoretic deposition, and oxide layers produced on titanium alloys for biomedical applications.