## RAMAN SPECTROSCOPY FOR SURFACE EVALUATION **OF TITANIUM ALLOYS**

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the subjects of the study. The samples were divided into 4 groups. 1 - samples without coatings; 2 - coated with calcium hydroxyapatite. 3 - coated with calcium hydroxyapatite, which was additionally coated with an antibacterial agent. 4 - coated with a film containing chitosan.

The studies were carried out using the Raman spectroscopy method. The experimental stand included a semiconductor laser (LML-785.0RB-04), an optical module for Raman spectroscopy (PBL785), a spectrograph (Sharmrock SR-303i) with integrated digital camera (ANDOR DV-420A-OE) that was cooled to -60 °C and a computer.

The aim of the work is to evaluate the surfaces of implant



Spectral differences between the studied groups were established using the method of Raman spectroscopy. The main spectral differences between the studied groups 4 and 1 appear on the lines ~1260, ~1416, ~1558, ~1665 and 1748 cm<sup>-1</sup>. These Raman lines do not appear in the group of samples 2, but the lines in the region of 950 – 1050 cm<sup>-1</sup> are clearly pronounced, corresponding to the lines of hydroxyapatite. As a result of the studies, spectral differences were established on the surface of implant samples with different types of their coatings based on VT6 titanium using Raman spectroscopy, which will further allow us to study the dynamics of changes in the coatings used when testing implants in preclinical trials.