

## SAND-BLASTING TREATMENT AS A WAY TO IMPROVE THE ADHESION STRENGTH OF HYDROXYAPATITE COATING ON TITANIUM IMPLANT

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The sand-blasting (SB) and acid-etching (AE) treatments of titanium (Ti) implants are widely used prior the deposition of the hydroxyapatite (HA) coatings for the improvement of surface characteristics, thus increasing life expectancy of implants. Our previous study have assessed the effects of SB at different pressures on grain size, mechanical properties and surface wettability of radio frequency (RF) magnetron silver-containing HA coating and revealed that the coating microstructure could be designed by controlling the pre-treated Ti surface topography. However, the type, size and geometry of the sand particles are also important factors determining the result of the treatment. Therefore, in the current study, the effect of SB particle size (50 and 250–320  $\mu\text{m}$ ) on the surface structure, roughness, wettability, mechanical properties, and adhesion failure at the interface of RF magnetron deposited HA coating is studied.

**Keywords:** *sand-blasting, acid-etching, titanium, hydroxyapatite, biocomposite, adhesion.*