

## TEXTURE AND MICROSTRUCTURE DEVELOPMENT IN RF MAGNETRON SPUTTER DEPOSITED HYDROXYAPATITE COATINGS

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The formation of dehydroxylated hydroxyapatite (HA) in the coatings deposited within radio frequency (RF) magnetron sputtering is considered as one of the obstacle of this method. The presence of OH-groups forming channels along c-axis in the hexagonal HA lattice is essential for HA structure formation. Absence or reorientation of OH-ions lead to structural changes, in particular to its decomposition and amorphization [1, 2]. Therefore, investigation of the influence of water content in the working atmosphere on the structure development of the RF-magnetron sputter deposited HA coatings is an urgent goal which is chased in this study. Furthermore, RF-magnetron sputtering is a line-of-sight deposition process where sputtered material is directed from a target towards a substrate. Therefore, the spatial arrangement of treated samples regarding the sputtered target is one of the parameters, which might influence the features of the formed films. This work was attempted to elucidate the fundamental aspects of RF-magnetron sputter deposition of HA thin films and to comprehend the relation between coating microstructure, texture and deposition conditions.

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