

Pulsed Laser Deposition Growth of thin Hydroxyapatite Layers on Titanium Substrates

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Hydroxyapatite-based ceramics are largely applied as coatings on metallic components of prostheses for inducing osteoblasts apposition and subsequent regrowth. However the ceramics-metal interfaces are often the seat of residual stresses with amplitude primarily depending on the deposition technique and the coating conditions. The amplitude of this stress can be very high causing a failure mechanism at the interface. Our aim is to validate new methods of laser ablation deposition (PLD), making it possible to control the residual stresses in ceramic layers and adherence to titanium substrates. We present a study of the growth of the layers of Hydroxyapatite obtained by PLD.

Keywords: laser ablation, thin films, hydroxyapatite