

## **Elaboration of Titania Nanotubes on Ti<sub>6</sub>Al<sub>4</sub>V Substrate by Electrochemical Anodization for Dental Application**

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**Abstract :** Nanostructured Titania layers formed on the surface of titanium and titanium alloys by anodic oxidation play an important role in the enhancement of their biocompatibility and osseointegration in the human body. In the current work, highly ordered titania nanotube array films were elaborated on Ti<sub>6</sub>Al<sub>4</sub>V medical grade alloys in organic electrolyte containing ethylene glycol, 0.2 wt. % NH<sub>4</sub>F and 4 vol. % H<sub>2</sub>O at an applied potential of 60 V for different durations. The diameters, lengths and wall thicknesses of the obtained nanotubes were characterized by scanning electronic microscopy (SEM).

**Keywords :** anodization, dental implants, titania nanotubes, titanium alloys, SEM

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