

Influence of Processing Parameters on Titanium Dioxide Nano-Tube Formation

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Titanium and its alloys are frequently used for orthopedic and dental implants because of their biocompatibility and desirable properties. Titanium dioxide nano-tubes were formed on titanium substrates by anodic oxidation in hydrofluoric acid containing solutions. The effect of electrochemical processing parameters such as electrolyte composition, anodizing voltage, voltage ramping and duration of anodization on the topology of titanium dioxide nano-tubes has been studied. SEM and TEM microstructural data as well as titanium nano-tube formation mechanisms will be discussed.

Palavras-Chave:

Titanium dioxide, nano-tube, anodization, processing parameters