

## Brazilian Oral Research

Print version ISSN 1806-8324

### Abstract

[DINIZ, Marilia Garcia](#); [PINHEIRO, Marco Antonio Santos](#); [ANDRADE JUNIOR, Antonio Carlos Canabarro](#) and [FISCHER, Ricardo Guimarões](#).



Characterization of titanium surfaces for dental implants with inorganic contaminant. *Braz. oral res.* [online]. 2005, vol.19, n.2, pp. 106-111. ISSN 1806-8324. doi: 10.1590/S1806-83242005000200006.

The aim of this research was to characterize titanium surfaces blasted with aluminum oxide ( $Al_2O_3$ ) particles using the KS 400 digital image processing program. Samples of grade II titanium plates were submitted to blasting processes using particles of  $Al_2O_3$ , and treated with a hydrofluoric acid-based solution. Three digital images from each sample surface were obtained using Scanning Electron Microscopy, and half-quantitative chemical analyses were subsequently performed using Electron Dispersive Spectroscopy (EDS). In addition, parameters related to the alumina phase, such as the concentration level, the area and perimeter of the particles and their circular form factor were measured using KS 400. The mechanical/chemical treatment caused depressions up to 10  $\mu m$  on homogeneous surfaces. Although the chemical attack significantly removed the alumina phase, residual particles could still be identified by the EDS. The average area occupied by the alumina phase on the samples surfaces was 469.32 ( $\pm$  284.98)  $\mu m^2$ , the particle average perimeter was 81.61 ( $\pm$  27.68)  $\mu m$ , and the mean circular form factor was 0.60 ( $\pm$  0.05). Characterizing the titanium surface is essential in the evaluation of the material manufacturing process because the presence of residual aluminum particles may have deleterious effects on the formation of the osseous/implant tissue.

Keywords : Titanium; Dental implants; Aluminum oxide; Image processing, computer-assisted.

[?abstract in portuguese](#)   [?text in english](#)   [?pdf in english](#)

### services

-  custom services
-  Article in pdf format
-  Article in xml format
-  Article references
-  How to cite this article
-  Access statistics
-  Cited by SciELO
-  Similar in SciELO
-  Automatic translation
-  Show semantic highlights
-  Send this article by e-mail



All the content of the journal, except where otherwise noted, is licensed under a [Creative Commons License](#)

*Sociedade Brasileira de Pesquisa Odontológica*

Av. Lineu Prestes, 2227  
Caixa Postal 8216  
05508-900 S Paulo SP - Brazil  
Tel./Fax: +55 11 3091-7810



[bor@sbpgo.org.br](mailto:bor@sbpgo.org.br)