

## **EFFECT OF SURFACE TREATMENT OF TITANIUM ON THE COLOR OF LOW FUSING PORCELAIN**

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### **ABSTRACT**

**Purpose:** The techniques used to enhance the titanium-ceramic bonding can be factors that may affect the color of dental porcelain. The purpose of this study was to investigate the effects of bonding agents, sandblasting, and hydrochloric acid on the final shade of low-fusing porcelain bonded to commercially pure cast titanium.

**Materials and Methods:** Sixty specimens of commercially pure titanium were equally divided into 6 groups. The first group received no surface treatment and served as control, the second group was subjected to sandblasting, and the third one was treated with hydrochloric acid. The remaining 3 groups were treated similarly but with application of a bonding agent. Low-fusing porcelain (Noritake) was fired onto the surface of the titanium specimens. The CIE L\*a\*b\* color parameters of the specimens were measured with spectrophotometer.

**Results:** The color difference ( $\Delta E^*$ ) between the control group and the other groups was in the range of 1.12 to 2.24 units. There were no significant differences among the  $\Delta E^*$  for all the groups. Furthermore, there were no significant differences for the L\* and a\* color parameters among different surface treatments. However, the significant difference was found between the b\* color parameter.

**Conclusions:** The bonding agents and the surface treatment using sandblasting or hydrochloric acid have minimal effects on the final shade of low fusing porcelain-commercially pure titanium system.