Biological Surface

As the implant surface is the first part of the device to contact the host's biological fluids, it is expected that its properties will affect the early healing between host and implant (Albrektsson & Wennenberg, 2004). Over the years, implant surfaces have evolved from smooth as-turned surfaces towards textured surfaces. Surface texturization may be achived through a series of methods such as acid-etching, grit-blasting, anodization, and others (Albrektsson & Wennenberg; Coelho et al., 2009). However, concerns regarding the final surface biocompatibility have been expressed (Lemons, 2004).

The new biological surface by A. B. Dental Devices combines within one surface all technological advances resulting in biological advantages. The wide particle range bioactive ceramic media blasting with mild gradative multi-step cleaning assures a moderately rough surface (Albrektsson & Wennenberg, 2004) (Figures 1 and 2) along with a highly biocompatible surface chemistry where only osseocunductive and biocompatible elements can be detected (Figure 3). Such combination assures fast bone-to-implant integration, and rapid biomechanical stabilization following surgery.

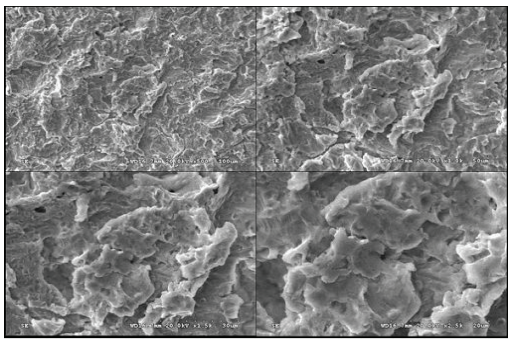

Figure 1: Scanning electron micrographs of the biological surface. The bioactive ceramic media blasting with mild gradative multi-step cleaning assures a moderately rough surface. The surface treatment results in surface texturization in the micrometer and nanometer level, maximizing the interaction between surface and biological fluids immediate after implantation, and load bearing capability after osseointegration establishment.

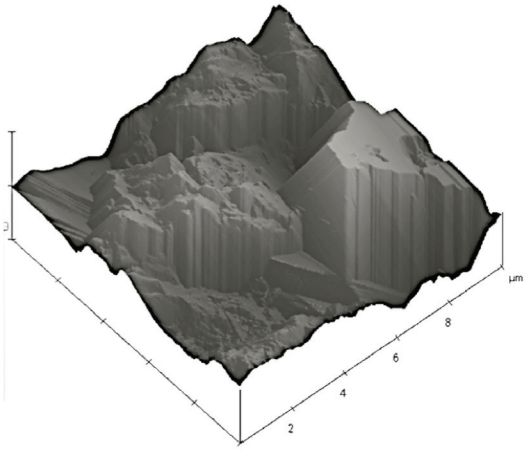

Figure 2: Representative three-dimensional topographical reconstruction showing texturization at the micrometer and the nanometer level.

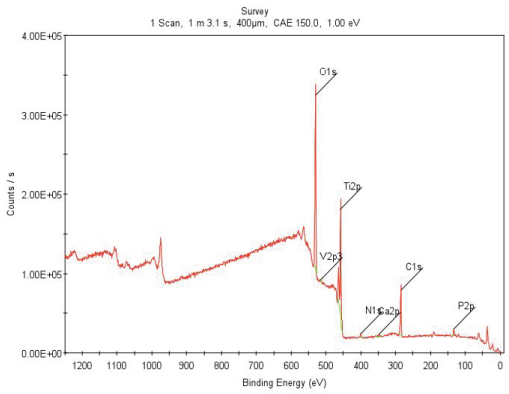

Figure 3: Surface specific spectroscopy detecting only biocompatible elements at the XXXXXXX surface.

References:

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Lemons JE. Biomaterials, biomechanics, tissue healing, and immediate-function dental implants. J Oral Implantol 2004;30(5):318-24.

A.B. Dental Devices Worldwide
www.ab-dent.com

A.B. Dental Devices, Ltd.
Tel: +972-8-8531388
Fax: +972-8-8522562

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