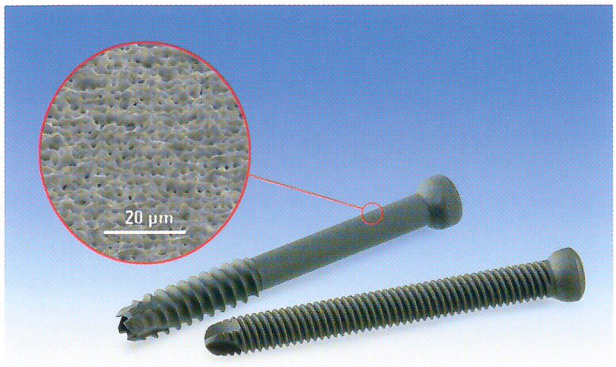
Steiger
Galvanotechnique SA
A company of the Estoppey-Reber Group

Biocer® – Glow discharge anodisation of titanium



Anodised titanium screws following the *Biocer*® process with SEM micrograph showing the porous surface morphology of the coating.

Applications
> Medical: Dental and orthopaedic implants
> Watch- and spectacles making: Decorative titanium layer
> Precision mechanics: Low friction coefficient layer

Biocer® is a product from the INNOSURF department, the innovation centre for the Estoppey-Reber group.

***Biocer*® is a glow discharge anodisation coating.**

The *Biocer*® coating is constituted of an amorphous titanium oxide layer whose surface roughness is enhanced by open porosity. The layer is enriched with elements such as calcium and phosphorous. Its thickness can be finely controlled by means of process parameters variation; typical values are ranging from 5 to 10 µm. *Biocer*® is dark grey coloured.

«In vitro» biocompatibility tests of the layer's response toward human osteoblasts proliferation have been successfully carried out as well as its bony cells mineralisation capabilities.

The rough and porous structure is very well adapted to either bioactive or morphological functionalisation.

Besides incorporated elements in the layer a further biofunctionalisation can be carried out consisting in the grafting of various bioactive molecules thanks to its appropriate morphology.

In the case of tribological applications where low friction coefficients are mandatory an additional PTFE layer can be deposited.

The layer can also be blackened for decorative applications.

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05.2007