Novitex (RBM) dental implants Process

Summary

NOVA Implants has completed technological validation By CE, FDA ,ISO13485 of RBM (Resorbable Blasting Media) Process. From now, our customers may benefit from well-known advantages of RBM implants.

RBM surface is featured by extensively developed roughness and no biocompatibility obstructions, thanks to using of biocompatible Calcium Phosphate blasting media. Calcium Phosphates are easily dissolved, leaving well textured surface completely free of contaminants. Additionally, RBM does not need strong acids for removing of blasting media remains, which contributes to implants biocompatibility as well. NOVA Implants' RBM surface undergoes completing surface treatment by citric acid, also compatible to live textures.

NOVA Implants RBM Process uses an appetite born Calcium Phosphate having approximate chemical composition of $Ca_3(PO_4)$ (Tri-Calcium Phosphate), blasted at automatic blasting machine allowing uniform and repeatable surface of implants.
The cleaning, washing-out and washing stages include using of Ultrasonic Bathes with De-Ionized Water of high purity , air drying is carried out in clean room class 10,000, while quality control at all stages of the treatment is performed including on-line SEM-EDS control and periodical XPS and optical profilometry tests.

NOVA Implants RBM implants demonstrate high surface performances, and when checked by advanced physical instruments (SEM, EDS, XPS, Optical Profilometer) are revealed to be fully identical to the surface performances of implants manufactured by the leaders in the field:

1. The surface structure (morphology) of the NOVA Implants RBM dental implants, as exposed by SEM microphotographs, is featured by highly developed surface porosity.

2. The surface roughness of the NOVA Implants RBM dental implants is well-defined and uniform. The main roughness parameter Ra has good acceptable value of 1.9microns.

3. The surface purity of the NOVA Implants RBM dental implants, as exposed by SEM microphotographs and checked by EDS-SEM instrument, is nearly absolute: no inclusions or contaminations are detected, any point of the surface is revealed to be pure Titanium alloy.

4. The surface chemical composition of the NOVA Implants RBM dental implants, as analyzed by XPS instrument, represents well acceptable values of the main elements usually found on the dental implants surface underwent blasting and blasting media cleaning.

RBM implants

NOVA Implants has completed technological validation of RBM (Resorbable Blasting Media) Process, From now, our customers may benefit from well-known advantages of RBM implants.

RBM surface is featured by extensively developed roughness, not less than in case of hard Alumina blasting, while overcoming the last in terms of biocompatibility, thanks to using of biocompatible Calcium Phosphate blasting media. Furthermore, opposite to Alumina and other hard blasters, Calcium Phosphates are easily dissolved, leaving well textured surface completely free of contaminants. Additionally, RBM does not need strong acids for removing of blasting media remains, which contributes to implants biocompatibility as well. NOVA Im- plants' RBM surface undergoes completing surface treatment by citric acid, also compatible to live textures.

RBM Process

Following years of experience in developing, engineering and industrial running of its alumina-blasting-double-etching Process, successfully operated during several years for manufacturing hundreds of thousands dental implants, NOVA Implants has entered the RBM processing as well, to contribute to the world spreading of this novel process and to allow its customers to benefit from it.

The RBM Process as presently validated is detailed in the appropriate NOVA Implants documents and consists of the following main stages of the implants' treatment:

- Washing from machining remains, including Ultrasonic Bathes and steam cleaning
- Calcium Phosphates Blasting for formation of surface morphology, using automatic blasting machine allowing uniform and repeatable blasted surface of implants
- After blasting washing
- Dissolution of the blasting media in diluted inorganic acid solutions not attacking Titanium
- Surface conditioning through replacement of inorganic acids by citric acid
- Ultimate washing, finally in Ultrasonic Bathe with DIW of high purity
- Air drying in clean room class 10,000
- Quality control at all stages of the treatment, including on-line SEM-EDS control and periodical XPS and optical profilometry tests.