Bone Implant Material with Enhanced Osseointegration and Improved Life-time through Periodic Structures

**Applications:**
- Surgical implants
- Orthopaedic implants
- Dental implants

**Advantages:**
- Micro-scale
- Ultrafast
- One step process
- Used with coatings

**Summary:**

*Technology Description*

A laser surface treatment for bone implants to create periodic structured patterns having a defined size. These patterns are applied to the surface of the implant where the bone and implant will be in contact to increase integration and life of the implant. This treatment is a one-step process that can be used on surfaces with topographical changes, including powder-coated and foam implants.

*Technology Application*

Primarily biomedical:
- Surgical implants (ex. screws)
- Orthopaedic implants
- Dental Implants
- Stents

Other applications of the technology could include improving mechanical, catalytic, and chemical properties of materials.

**Stage of Development:** Proof of Principle

**Patent Status:** Patent application in progress

**Licensing Status:** Available for licensing in specific fields of use

Contact:
Alex DeTrana
Oak Ridge National Laboratory
P.O. Box 2008, Mail Stop 6196
Oak Ridge, TN 37831
(865)576.9682
detranaag@ornl.gov
www.ornl.gov/partnerships