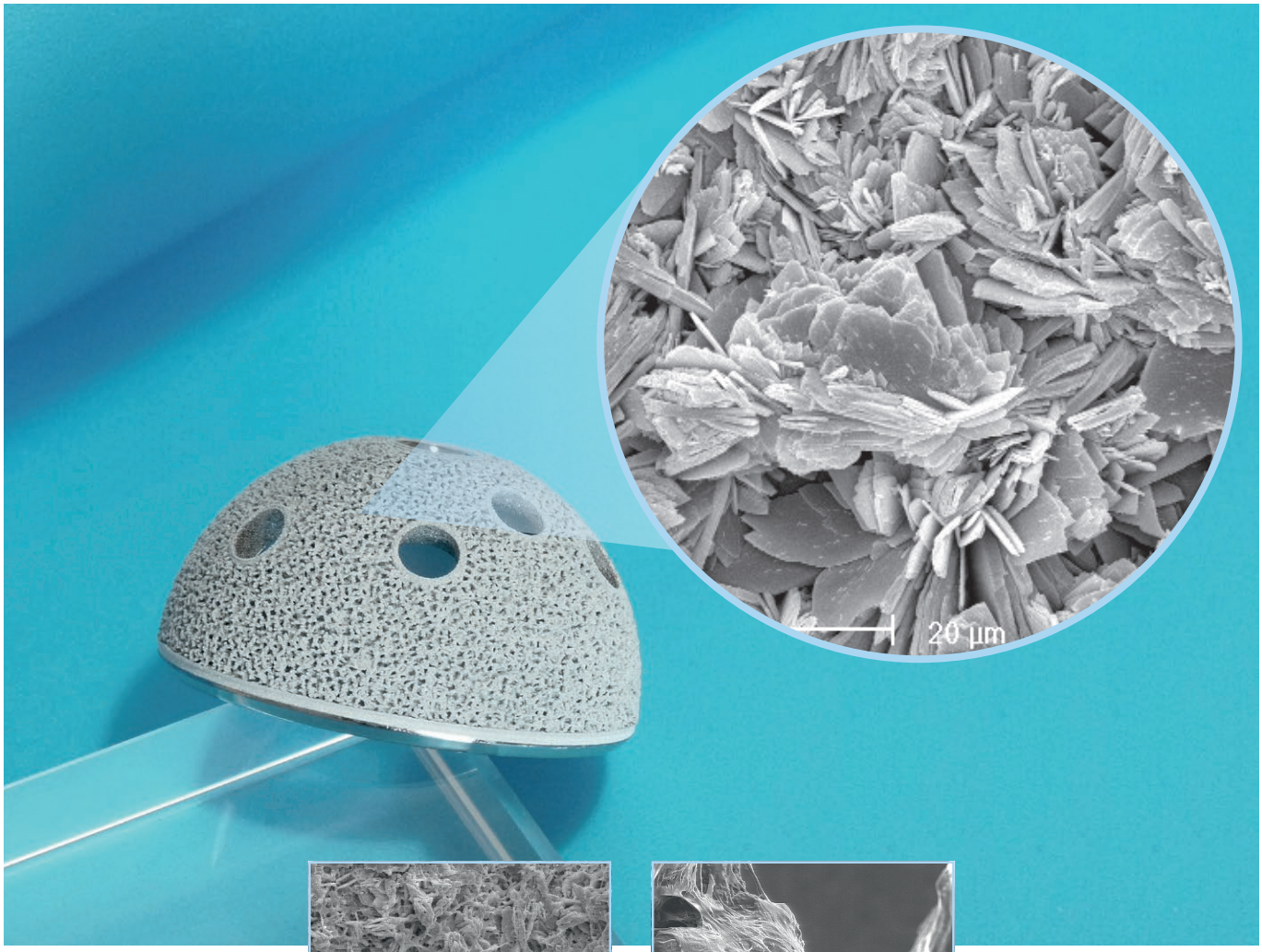
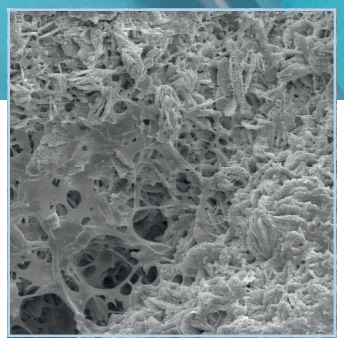
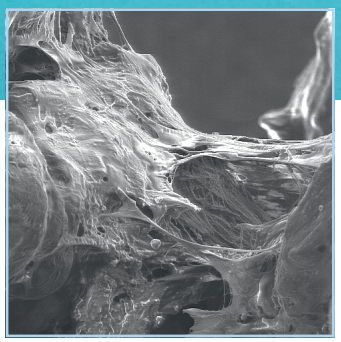
DOT Coatings

Calcium Phosphate Coating on Implants made by Additive Manufacturing Methods







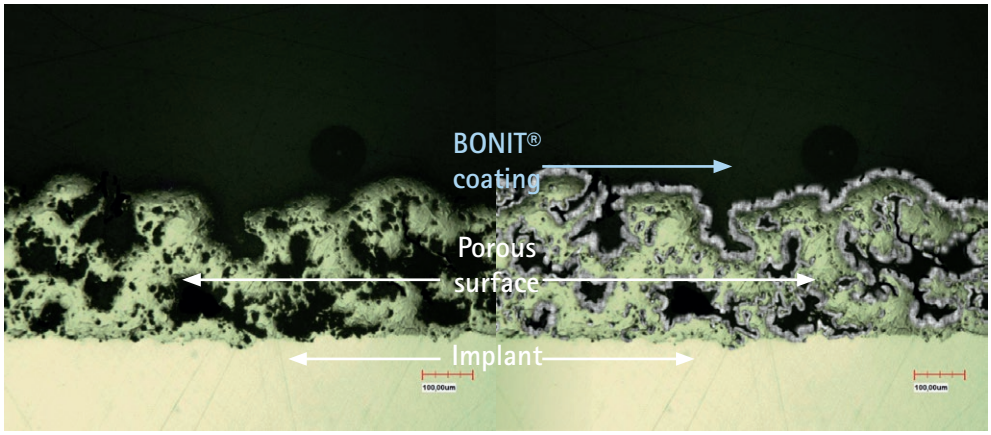
DOT
medical implant solutions

Implants made by additive manufacturing methods display porous surface structures suitable for ingrowth of bone tissue. To promote and accelerate bone ingrowth and osseointegration a bioactive BONIT® (Calcium phosphate) coating can be applied on the structured and porous surface.

BONIT® coating on additive manufacturing made implants

"Non-line-of sight" Technology of BONIT®

Due to the "non line of sight" process technology BONIT® coating is also suitable for porous structures, manufactured by additive manufacturing techniques. Deposition from a solution enables a complete and homogenous coverage of porous surface structures.



Titanium-Plasma-Spray (TPS) Surface on an implant

TPS + BONIT® on an implant

Properties

Test criteria BONIT®	Result
Coating thickness	~20 µm
Adhesive strength	≥ 15 MPa
Ca/P ratio	1.1 ± 0.1
Phase composition	≥ 70 % brushite / ≤ 30 % HA

Advantages

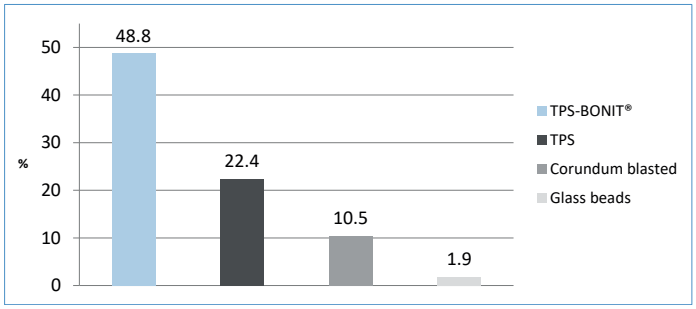
- Fine crystalline structure with large free surface
- Complete and even coverage of porous surfaces and complex implant shapes
- Simultaneous bone formation and coating substitution
- Replacement by autologous bone
- Microporosity with high capillarity
- Outstanding biocompatibility
- Thin coating thickness
- Optimal solubility
- Faster and better osseointegration
- "Non-line of sight" process

Why BONIT® coating on your structured implant?

BONIT® coating leads to a faster and better osseointegration of your implant.

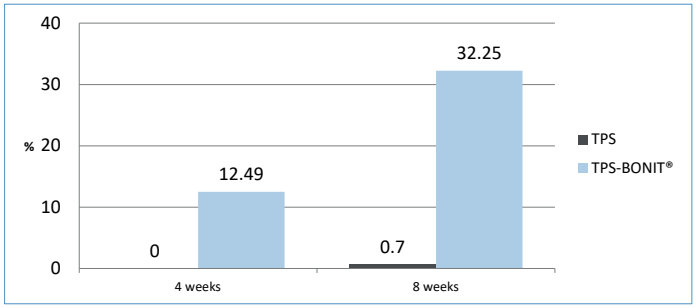
More Bone Deposition with BONIT®

Significantly more bone ongrowth after 12 weeks through bioactive BONIT® coating was evaluated in an animal study in minipigs [1]



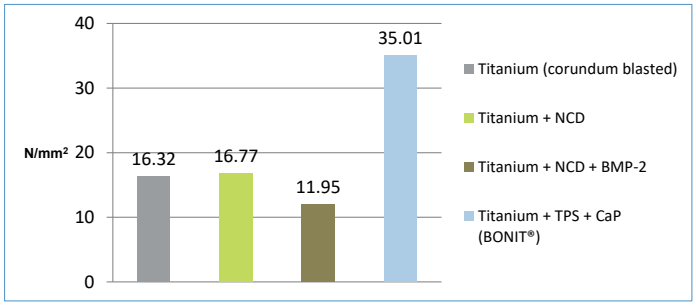
Proven Gap-bridging Capacity

Accelerated gap bridging by BONIT® coating after 4 and 8 weeks in minipigs (circular gap ~ 1 mm) [2]



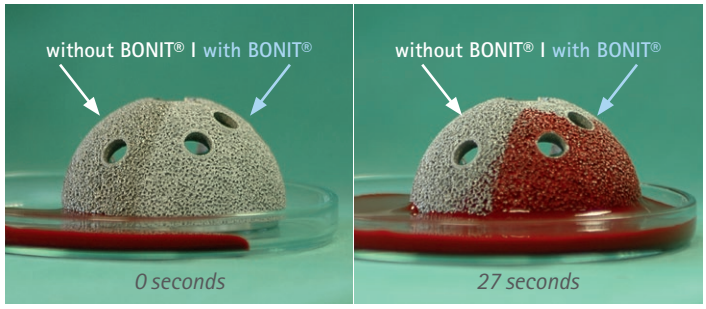
High Push-out Values

Extremely High Push out values for BONIT® coated samples [3]



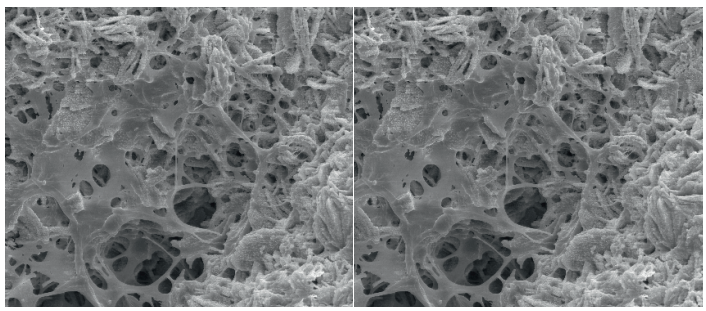
Outstanding capillarity

High capillarity of BONIT® coated samples for uptaking of blood and growth factors



Fast Bone Formation *in vivo*

Bone formation on BONIT® coated hip stem, explanted after six weeks



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We look forward to talking with you!

DOT GmbH
A Member of Eifeler Holdings
Charles-Darwin-Ring 1a
18059 Rostock

Phone +49 381 40 33 50
Fax: +49 381 40 33 599
info@dot-coating.de
www.dot-coating.de

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