

## CUTTING EDGE TECHNOLOGY

- New type of metal - metal composite material for biomedical implants comprising biocompatible titanium (Ti) or biocompatible Ti alloy and a biodegradable component (in particular magnesium, Mg).
- The composite material is characterized by a low elastic modulus and density, while maintaining good mechanical strength and fatigue endurance comparable to commercial purity Ti.
- The composite material is manufactured using a cost effective approach, with a sequence of powder metallurgy techniques utilized at low processing temperature.

## COMPETITIVE ADVANTAGE

- Ideal metal material for manufacturing of biomedical implants, which are expectedly subjected to intense mechanical and fatigue loading, with improved biocompatibility, surface bioactivity, osseointegration potential, and which reduce the stress-shielding phenomenon.
- Cost effective and productive fabrication of the raw composite material.
- Possibility to manufacture implants of complex shapes by machining from the raw composite material.

## INDUSTRIAL APPLICABILITY

- The composite material can be industrially and repeatedly fabricated and used, particularly for **fabrication of dental implants with excellent biocompatibility and mechanical compatibility** with a living tissue, **suited for application under intense cyclic mechanical loading.**

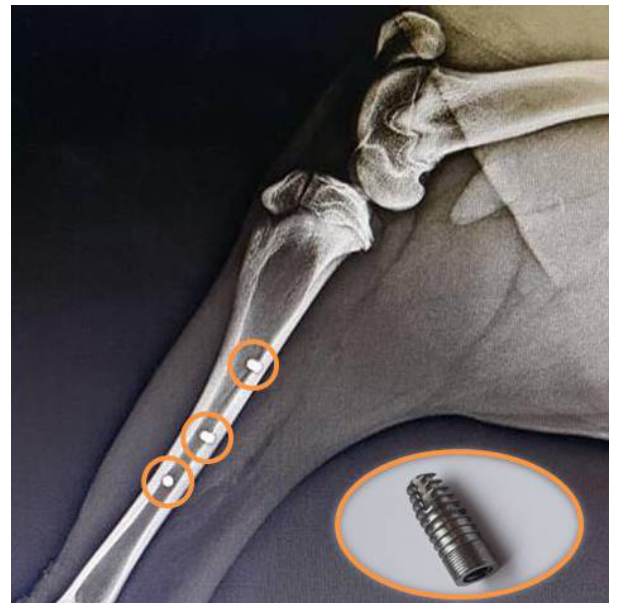
**THE INVENTORS ARE LOOKING FOR  
AN INDUSTRIAL PARTNER FOR  
SELLING / LICENSING THE INNOVATIVE  
TECHNOLOGY.**

## STAGE OF PROTECTION

- Croatian patent application (P20150781A)
- Slovak patent application (PP 50046-2016)
- European patent application (EP3322454)
- Israel patent application (IL 256877)
- Registered Slovak trademark: "BIACOM"

## STAGE OF DEVELOPMENT

- Mechanical performance and in-vitro corrosion behavior of BIACOM® was complexly assessed.
- Response of bone tissue to BIACOM® was preliminary assessed by implantation assays using large animal models.



*Implant from Ti + 12% Mg composite material implanted into a sheep's femur bone within in-vivo tests.*

- Performance of cylindrical dental implant from BIACOM® of particular design is being complexly evaluated according to the standard for endosseous dental implants.

## FOR MORE INFORMATION PLEASE CONTACT

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*The inventors use services of Technology Transfer Office of Slovak Academy of Sciences to market their invention.*