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PARCUL TEHNOLOGIC ȘI INDUSTRIAL
GIURGIU NORD

EXPERIMENTAL MODEL FOR BIOFUNCTIONALIZATION OF TI-MO-ZR-TA ALLOYS USED IN ORTHOPEDIC IMPLANTOLOGY (BIO-SIMTIT)

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The **BIO-SIMTIT** project proposes the development and validation of new Ti-Mo-Zr-Ta titanium alloys for orthopedic implants, with the main objective of improving their bone integration and biocompatibility.

By using advanced additive laser manufacturing (SLM) technology, high precision is ensured in the creation of personalized implants, adapted to the specific needs of each patient.

In addition, the application of a biomimetic surface treatment with hydroxyapatite contributes to the creation of an interface favorable to osteointegration, essential for the long-term success of the implants. This integrated approach not only meets the current requirements in the field of orthopedic implantology, but also opens up new perspectives in the personalization of treatments, offering sustainable and scalable solutions to improve the quality of life of patients.

BIO-SIMTIT project is distinguished by the combined use of SLM technology for precise alloy fabrication and the application of a biomimetic hydroxyapatite surface treatment, thus offering a unique and personalized solution for each clinical case.

Website: <https://simmt.ro/bio-simmt/>

Call: Experimental Demonstration Project (PED),
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Competitiveness

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Project period: 08/01/2025 – 31/12/2026

Creation of a solution that
significantly improves current
methodologies in orthopedic
materials.

Addressing and solving a
specific need, identified in
orthopedic implantology

Ensuring that the solution is
sustainable, easy to use and
scalable



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