TECHNICAL UNIVERSITY OF KOŠICE
Faculty of Mechanical Engineering

BIOMEDICAL ENGINEERING

Regenerative medicine and clinical application in Medical 3D printing

Biomedical Engineering is a research and development company focused on the design and production of personalized titanium implants using 3D printing (figure 1). Currently, the company is developing a new generation of innovative implants for regenerative medicine with the promise of their early clinical adaptation and use within hospitals. We count with ISO9001 and ISO13485 certified facilities.

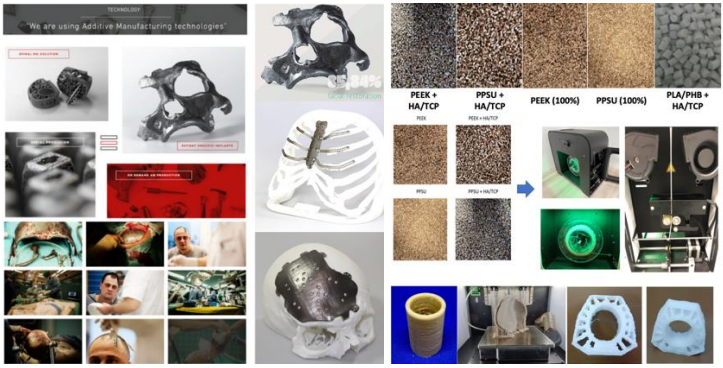

Figure 1. A portfolio of personalized titanium implants produced using additive technology and medical filament extrusion process, materials and 3D printed implants (aortic model, personalized Cranial implant from PEEK and personalized cage)

Our research is focused on the production of filaments from low-temperature polymers (e.g. PCL ...), from high-temperature polymers (e.g. PEEK, PPSU ....), PLA/PHB and polydioxanone. Part of the production process is the recording of the diameter of the filament a parameter that helps to verify the quality of the manufactured filament. We support in providing software ad hardware solutions through setting up and optimizing required parameters in the pre-processing of 3D bioprinting for new type of materials.

The Department of Biomedical Engineering and Measurement provides training and research activities in biomedical engineering, prosthetics and orthotics, general mechanical engineering, mechatronics and measurements The main area of research is in personalized implantology and regenerative medicine.

We are ready for opportunities for cooperation and project solutions (incl. European funded projects e.g. HORIZON-HLTH-2023-TOOL- 05-01, HORIZON-HLTH-2024-TOOL-05-02) Contact: marek.schnitzer@biomedicalengineering.sk
https://sk.biomedicalengineering.sk/home