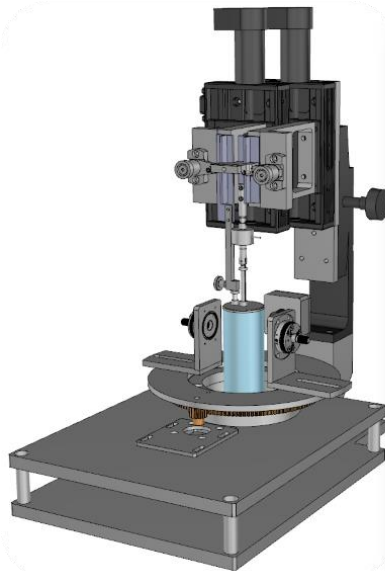


Post-Doc/PhD (Dr.-Ing.) Positions in Muscle Tissue Engineering (100% / 75% E13)

Adaptive and automated Muscle Decellularization-Recellularization using a *TissueRegenerator* Bioreactor Platform

The **Institute of Medical Biotechnology** (MBT) at FAU is searching for highly motivated candidates to fill in **1x Post-Doc** and **2x PhD** positions in the fields of Muscle Tissue Engineering exploring Regenerative Medicine technologies. The project aims to develop innovative process strategies for muscle regeneration using cutting-edge technologies in tissue engineering and control systems to establish a scalable, adaptive bioreactor system in a multidisciplinary setting (BMBF-funded project involving partners from Engineering and Medicine).

Muscle regeneration is a complex process limited by the difficulty of replicating the intricate biochemical and biomechanical environment needed to sustain cellular growth and differentiation *in vitro*. Current methods often cannot generate viable muscle tissue with fully structural and functional properties. Key challenges include precise orchestration of biochemical signalling, nutrient delivery, and electro-mechanical stimulation, all of which are critical for the success of tissue engineering approaches. This project seeks to tackle these challenges by integrating advanced bioreactor technologies with real-time monitoring and feedback control systems. Specifically, we aim to develop a novel strategy for muscle tissue decellularization and recellularization, supported by a robust process control framework to optimize growth conditions. This multi-disciplinary endeavour aspires cutting-edge techniques in tissue engineering, sensor integration, bioprocess automation and stem cell biology.



- Goal:** Re-design, engineering and validation of our *TissueRegenerator*
- Areas:** optical/mechanical/biomedical engineering; tissue engineering; Python; electronics
- Background:** Knowledge in the fields of optical systems, python programming, mechanical engineering and electrical engineering are desired. Additional basic knowledge in cell biology and immunology can be helpful
- Qualification:** Master of Science in fields of engineering
- Salary:** Post-Doc: TVL-E13 (100 %); PhD: TVL-E13 (75 %)
- Start from:** from **1. April 2025**. Please send your application as single pdf document to michael.haug@fau.de