Technische Universität Braunschweig

Institut für Werkstoffe

Development of Advanced Titanium Alloys

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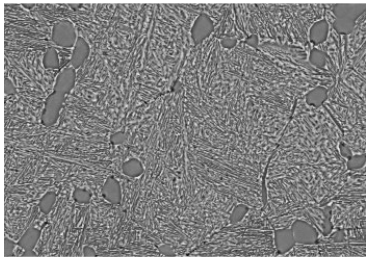
Focus of Research: Titanium Alloys

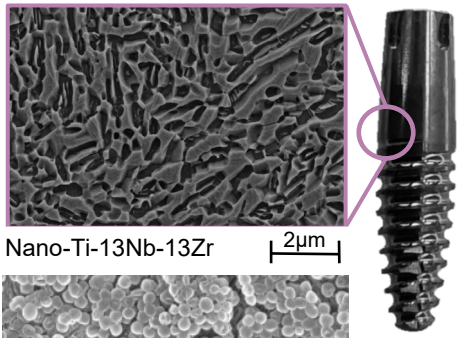
Aerospace Engineering

Compressor blades (Ti-6246)

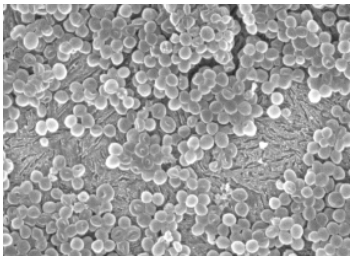


Ti-6Al-2Sn-4Zr-6Mo 15µm

Medical Engineering



Nano-Ti-13Nb-13Zr 2µm



S. Aureus bacteries 10µm

3,5 mm

Bachelor-, Studien- oder Master-Thesis

Current research questions that students can investigate include (among others):

- Powder bed fusion and microstructure optimisation of Ti-6Al-2Sn-4Zr-6Mo (Ti-6246)
- Improvement of different Titanium alloys for medical applications (dental implants)
  Related alloys: CP-Titanium, Ti-13Nb-13Zr, Ti-15Mo, Ti-36Nb-2Ta-3Zr-0.3O

Experimental activities: 3D-prining (PBF-LB/M) and multi-track laser-melting experiments, dynamic deformation (room and elevated temperature), heat treatments, microstructure and phase analyses, determination of mechanical properties (static and dynamic)

Requirements: Interest in experimental work with titanium alloys and alloy design, basic knowledge in materials science. Duration: Three to six months, start anytime based on capacity / personal request