

Department:	Department of Dental Materials and Biomaterials Research (ZWBF)
Job site:	RWTH Aachen University Hospital
Description of the position:	Biomedical Engineer, Mechanical Engineer (M. Sc., PhD position)
Job description:	<p>Our profile</p> <p>The Dental Materials and Biomaterials Research team develops tailored biomaterials with tissue engineering techniques. It focuses on novel 3D bioprinting techniques to manufacture biomimetic 3D in vitro models and tissue replacements for in vivo applications. Scientists from different disciplines work together to tackle the associated interdisciplinary challenges.</p> <p>Your tasks</p> <p>You will be part of the DFG-funded graduate school Mechanobiology in Epithelial 3D Tissue Constructs (ME3T; me3t.rwth-aachen.de). In project D2 'Mechanobiological challenges related to hydrogel-based bioprinting technology for manufacturing novel 3D cell culture models' you will employ our custom-made 3D bioprinting platform. You will investigate cellular responses to the printing-related shear stress (mechanical signal). You will compare different nozzle types, apply pressure at different levels, use a variety of natural and synthetic hydrogels and hydrogel blends, and test the effects of cell density. The shear stresses that occur in the nozzle will be modeled on the basis of fundamental fluid dynamic equations. The shear stress under different conditions will then be correlated with the observed cellular responses.</p> <p>The successful applicant must be accepted as a Dr.-Ing. candidate at RWTH Aachen University.</p>
Requirements / profile:	<p>Your profile</p> <p>You have quickly and very successfully completed your Master studies at a university (Biomedical Engineering, Materials Science, Mechanical Engineering with focus on Biomedical Technique, or comparable study programs). You intend to obtain a doctorate (Dr.-Ing.) on a challenging transdisciplinary topic.</p> <p>During your studies you have acquired knowledge in the transdisciplinary fields of biomaterials, tissue engineering, and cell biology. Moreover, you have comprehensive knowledge in fluid mechanics. Beside your scientific qualification you distinguish yourself by single-mindedness and resilience and by an excellent capacity for teamwork. You are fluent in written and spoken English.</p>
Pay category:	TV-L 13 (100%)
Hiring date:	July 01, 2022
Duration of employment:	3 years
Contact:	Univ.-Prof. Dr.-Ing. Horst Fischer Email: hfischer@ukaachen.de , phone: +49 (0)241 80-80935 www.biomaterials-research.de
Equal career prospects for women and men.	
Severely disabled applicants with equal qualification will be given preferential consideration.	
Application deadline: March 31, 2022	