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:	**Our profile** 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. **Your tasks** You will be part of the DFG-funded graduate school *Mechanobiology in Epithelial 3D Tissue Constructs*. In project D2 'Mechanobiological challenges related to hydrogel-based bioprinting technology for manufacturing novel 3D cell culture models' you will employ our different custom-made 3D bioprinting platforms and our self-constructed bioreactors. You will investigate cellular responses to the printing-related shear stress and hydrostatic pressure (mechanical signals). You will compare different bioprinting techniques, different process parameters, use a variety of natural and synthetic hydrogels and hydrogel blends, and test the effects of cell density. The shear stress and hydrostatic pressure that occur during the printing process are investigated in silico using computational fluid dynamics. The mechanical forces are then correlated with the observed cellular responses. The successful applicant must be accepted as a Doctor of Engineering (Dr.-Ing.) candidate at RWTH Aachen University.
Requirements / Your profile:	**Your profile** 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 (Doctor of Engineering, Dr.-Ing.) on a challenging transdisciplinary topic. During your studies you have acquired knowledge in the transdisciplinary fields of biomaterials and tissue engineering. Moreover, you have comprehensive knowledge of engineering design and 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.
Pay category:	TV-L 13 (100 %)
Hiring date:	July 01, 2025
Duration of employment:	3 years
Contact/Send application to:	Univ.-Prof. Dr.-Ing. Horst Fischer Email: hfischer@ukaachen.de, phone: +49 (0)241 80-80935 www.biomaterialforschung.de
Equal career prospects for women and men.	
Severely disabled applicants with equal qualification will be given preferential consideration.	
Application deadline: March 03, 2025	