Technische Universität Berlin offers an open position:

**Research assistant - salary grade E13 TV-L Berliner Hochschulen**

part time employment may be possible

**Faculty V - Institute of Mechanics / Structural Mechanics and Structural Calculation**

Reference number: V-245/20 (starting at the earliest possible / until 31/10/21 resp. for a period of 18 months / closing date for applications 08/05/20)

**Working field:** Computational Mechanics with an emphasis on Biomechanics and Piezoelectric Material Behaviour

Bone has the ability to self-regenerate after injury, however, large bone defects often lead to delayed healing or non-unions. The treatment of these conditions remains a clinical challenge. To overcome the limitations of current bone treatment options, novel alternatives hold promise as the next generation of tissue engineering scaffolds. Experimental trial and error in the design of these scaffolds could be reduced by the development of a computer platform that could support the design of these scaffolds. The project therefore aims to develop suitable numerical models to investigate the behaviour and optimal design of tissue engineering scaffolds and their influence on the bone regeneration process.

You will employ engineering, mathematical and computational techniques (FEM) to determine the mechanical and electrical signals generated due to the physiological stimulation of a scaffold and to investigate how these signals influence the bone regeneration process. You will also investigate how different parameters influence the bone healing process. Using this understanding, the potential design optimization of scaffolds (concerning scaffold geometrical and material properties) will be also investigated. You have to be able to employ experimental data available to validate and qualify the numerical prediction.

**Requirements:**

- Successfully completed university degree (Master, Diplom or equivalent) in mechanical engineering, biomedical engineering, material science or a related discipline
- Strong skills in Finite Element Modelling (e.g. Abaqus)
- Ideally knowledge or experience in material science in particular piezoelectric materials
- Knowledge in programming is advantageous (e.g. C/C++, Matlab, Python)
- Willingness to work in a multidisciplinary project
- Good German and English language skills (oral and written)

Please send your application with the reference number and the usual documents by e-mail to Prof. Dr. Zehn (manfred.zehn@tu-berlin.de) and Anke Happ (anke.happ@tu-berlin.de).

To ensure equal opportunitiess between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities.

Please send copies only. Original documents will not be returned.

The vacancy is also available on the internet at
http://www.personalabteilung.tu-berlin.de/menue/jobs/