



**Technische Universität Berlin**



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 Machine Tools and Factory Management / Machine Tools and Manufacturing Technology**

**Reference number:** V-594/24 (starting at the earliest possible / limited for 24 months / closing date for applications 29/11/24)

### **Working field:**

The preparation of cutting edges has positive effects in the manufacture of tools for high-performance machining. One process that can be used to produce the complex edge geometries of cutting tools is robot-guided brushing. In this process, the brushing tool is guided along a workpiece edge by an industrial robot in order to produce a defined edge rounding with a high surface quality. Due to the complex interaction between the tool and the workpiece, brushing processes are usually designed in an iterative trial-and-error process, which is time-consuming and costly. Against this background, a numerical simulation of the brushing process is to be developed as part of a publicly funded project, with the aim of creating an in-depth understanding of the process and the possibility of simulation-based design of brushing processes. The field of activity includes the following aspects:

- Research in the field of machining with geometrically indeterminate cutting edges, particularly in the area of robot-guided machining processes
- Carrying out technological investigations and analyzing interdependencies with the aid of numerical simulation methods
- Independent planning, implementation and evaluation of research content
- Collaboration, coordination and organization of research projects in close cooperation with industrial companies, research associations and scientific partners - primarily in German-speaking countries
- Presentation of research results to industry representatives and scientists at national and international specialist conferences and trade fairs

### **Requirements:**

- Successfully completed scientific university studies (Diplom, Master or equivalent) in mechanical engineering or related engineering sciences
- In-depth knowledge in the field of brushing processes
- In-depth experience in working with machine tools and industrial robots
- Good command of written and spoken German

### **Optional criteria:**

- Strong willingness to pursue a scientific doctorate
- Knowledge in the field of machining production processes, in particular fine and finishing technologies
- Experience with a programming language for data processing and process modeling, e.g. Python or Matlab
- Experience in the field of numerical simulation methods, e.g. FEM, CFD, DEM
- Prior knowledge in the field of statistical test planning and experience in project management
- Independent, systematic and structured way of working
- Good written and spoken English; willingness to acquire the missing language skills

Please send your application, stating the **reference number**, together with the complete documents (certificates, diplomas, etc.) **exclusively by email** bundled in one PDF document to Prof. Dr.-Ing. Uhlmann via **bold@iwf.tu-berlin.de**.

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guarantee for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: [https://www.abt2-t.tu-berlin.de/menue/themen\\_a\\_z/datenschutzerklaerung](https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung).

To ensure equal opportunities 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. Applications from people of all nationalities and with a migration background are very welcome.

Technische Universität Berlin - Die Präsidentin - Fakultät V, Institut für Werkzeugmaschinen und Fabrikbetrieb, FG Werkzeugmaschinen und Fertigungstechnik, Prof. Dr.-Ing. Uhlmann, Sekr. PTZ 1, Pascalstraße 8-9, 10587 Berlin

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

