



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-143/25 (starting at 01/06/25 / for 27 months / closing date for applications 09/05/25)

Working field:

As a result of the mechanical and thermal loads, different wear mechanisms occur on the grinding wheel during grinding, which make an efficient and reproducible dressing process necessary. When sharpening with sharpening stones, the grinding wheel bond is reset by the particle-cooling lubricant mixture produced in the active gap, which has not been affected in the analyses of previous investigations. As part of a project funded by the German Research Foundation (DFG), knowledge is to be gained about the interactions between the particle-cooling lubricant mixture and the resulting grinding wheel topography during the sharpening of high-hardness grinding wheels. The knowledge gained will then be used to develop a hybrid process model to map the microscopic processes in the active gap and to describe the sharpening process physically.

- Research in the field of machining with geometrically indeterminate cutting edges, especially in the field of grinding technology
- Analysis of the sharpening process as a function of the sharpening stone and grinding wheel specification and the cooling lubricant
- Stochastic analysis of the investigated influencing variables
- Development of a simulation model based on fluid and particle simulation to analyze the sharpening process
- Development of a hybrid process model for the targeted design of the sharpening process
- Independent planning, implementation and evaluation of research content
- Collaboration in research in the field
- Collaboration, coordination and organization of research projects in close cooperation with industrial companies, research associations and scientific partners
- Presenting research results to industry representatives and scientists at national and international specialist conferences and trade fairs

Requirements:

- Successfully completed scientific university studies (Master, Diplom or equivalent) in the field of mechanical engineering or related engineering sciences
- In-depth knowledge in the field of production engineering
- In-depth experience of numerical simulation methods, e.g. CFD, DEM
- In-depth knowledge of a programming language for process modeling, e.g. Python or Matlab
- Good knowledge of German and/or English required; willingness to acquire the respective missing language skills

Optional criteria:

- Knowledge in the field of machining production processes, in particular grinding technology
- Experience in the field of statistical test planning
- Experience in the operation of CNC machine tools
- Knowledge of the relevant measurement and control technology
- Independent, systematic and structured way of working

We offer:

- An inclusive and appreciative working atmosphere
- International networking and mentoring by experienced colleagues
- The opportunity to work partly from home

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.

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

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

