Technische Universität Berlin

Research Assistant - salary grade E13 TV-L Berliner Hochschulen

part-time employment may be possible

Faculty V - Mechanical Engineering and Transport Systems, Institute for machine tools and factory management / Machine Tools and Manufacturing Technology
Reference number: V-372/25 (starting at the earliest possible / limited until 31/05/2027 / closing date for applications 19/09/25)

Your responsibility:

The honing of cylindrical functional surfaces is a critical process in the manufacturing chain, as it enables the production of high-quality component surfaces that meet the demanding requirements of various industries, including mechanical and plant engineering, automotive and supply chain, hydraulics, pneumatics, aerospace, and medical technology. However, the capabilities of currently available honing tools are being pushed to their limits. Notably, the honing of blind hole drillings poses significant challenges with existing tools, resulting in high production costs. To address this issue, a research project will be conducted in collaboration with an industrial partner to develop an innovative honing tool that utilizes additively manufactured honing stones.

The scope of activities includes the following aspects:

- Research the innovative field of honing blind hole bores
- Planning, executing and analysis of experimental research to gain a deeper understanding of the relationships between process parameters, tool design, and surface finish during longitudinal stroke honing
- Development of a predictive model for designing honing tools that can accommodate the specific demands of the honing blind hole bores
- Collaboration in research activities of the chair
- Collaboration, coordination and organisation of research projects in close cooperation with industrial companies, research associations and scientific partners
- Presentation of research results to industry representatives and scientists at national and international conferences

Your profile:

- successfully completed scientific university studies (Master, Diplom or equivalent) in mechanical engineering or related engineering sciences
- in-depth knowledge in the field of manufacturing technologies
- extensive experience in working with machine tools and industrial robots
- good knowledge of German and/or English required; willingness to acquire the respective missing language skills.
- strong willingness to do a doctorate desirable
- knowledge in the field of machining technology and additive manufacturing advantageous
- Knowledge in the field of abrasive fine-finishing technology, in particular honing advantageous
- prior experience in statistical experimental design and project management advantageous
- experience with programming languages for data processing and process modelling, e.g., Python or Matlab advantageous
- experience in the field of numerical simulation methods, e.g. FEM, CFD, DEM advantageous
- independent, systematic and structured way of working desirable
- willingness to undertake business trips (national and international) desirable

How to apply:

Please send your application **with the reference number** and the usual documents **only via email** bundled in one PDF document to Dr.-Ing. Bold 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 guaranty 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.

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

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