TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation and active participation. For TUD diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and productivity to the success of the whole institution.

At the **Faculty of Physics, Institute of Nuclear and Particle Physics,** the **Chair of Accelerator Mass Spectrometry and Isotope Research** offers in close cooperation with the **Helmholtz-Zentrum Dresden-Rossendorf HZDR** a project position as

Research Associate / PhD Student (m/f/x) **in Accelerator Mass Spectrometry (AMS)**
(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting at the **earliest possible date**. The position is initially limited until June 30, 2028 and entails 75% of the full-time weekly hours with the option of extension subject to a further project. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

At the Chair of 'Accelerator Mass Spectrometry and Isotope Research' (AMS) a state-of-the-art AMS system (HAMSTER) with the highest sensitivity is being set-up in collaboration with the Helmholtz-Zentrum Dresden-Rossendorf (HZDR). We aim to significantly improve measurement efficiency and accuracy in AMS and in SIMS (Secondary Ion Mass Spectrometry) measurements. For this we pursue a novel approach to improve sensitivity by deceleration of negative ions in an ion cooler, where the rare isotope beam is cleaned from interferences by means of chemical reactions, collisions, and interactions with photons from a laser, before the particles are injected into a particle accelerator.

Tasks: We search for candidates with interest in new AMS measurement strategies; this includes:

- optimization of the ion-laser interaction for accelerator mass spectrometry
- developing ^{182}Hf-AMS with the goal to detect traces of interstellar ^{182}Hf atoms
- operating and optimizing an ion source for negative ions and testing with a series of ion beams
- support of SIMS measurements in combination with AMS (SuperSIMS)
- implementing a new compact ionisation chamber for single atom counting

Requirements: very good research-oriented university degree in a discipline relevant to our research fields (e. g. physics, computer science, electrical/electronic engineering, chemistry etc.). The knowledge of Python, C or other programming languages in use for accelerator facilities is advantageous.

We offer: the opportunity to become part of a dynamic and expanding team that runs state-of-the-art AMS facilities, that develops and applies new world-leading single-atom counting techniques. You will join a team with strong international collaborations and with established expertise in accelerator mass spectrometry applications in geological, environmental science and in nuclear astrophysics.

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

Please submit your detailed application with the usual documents by **September 26, 2025** (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies), preferably via the TUD SecureMail portal https://securemail.tu-dresden.de by sending it as a single pdf file to **anton.wallner@tu-dresden.de** or to: **TU Dresden, Institute of Nuclear and Particle Physics, Prof. Anton Wallner, Helmholtzstr. 10, 01069 Dresden, Germany**. Please submit copies only, as your application will not be returned. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis.