Helmholtz-Zentrum Dresden-Rossendorf e.V.

With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. The Institute of Radiation Physics conducts research for states of matter under extreme conditions and in very small dimensions. The Department of Laser Particle Acceleration is looking for a

Postdoc (f/m/d)/Laser Scientist (f/m/d) – High-Power Laser Development and Amplifier Upgrade

City: Dresden; Starting date (earliest): 01/08/26; Duration: 24 Months;
Remuneration: TVöD-Bund; Reference number: 2026/65; Closing date: 18/06/26

Tasks

- The position involves supporting the upgrade and qualification of the high-power laser system PEnELOPE at HZDR within a project aiming for laser-driven neutron generation. The successful candidate will contribute to the design, integration, and commissioning of new laser components, in particular high-repetition-rate diode pump modules and associated amplifier upgrades.
- Responsibilities include planning and executing experimental campaigns for laser characterization, optimizing system performance (e.g., pulse energy, duration, beam quality, and stability), and ensuring reliable operation under increased repetition rates.
- The role also covers coordination with internal engineering teams and external partners, as well as documentation of system performance and contribution to technical reports and scientific publications.
- You will work at the interface of laser development and application, supporting experiments related to laser-driven particle and neutron generation. The position offers the opportunity to work on cutting-edge high-power laser technology in a collaborative, international research environment.

Requirements

- Completed PhD in the field of Physics or comparable natural or engineering sciences with the focus on ultrafast or high-power laser physics
- Experience with laser system integration, alignment, and diagnostics
- Knowledge of amplifier systems (e.g., CPA, diode-pumped lasers)
- Hands-on experience in experimental work, data analysis and optics simulations
- You enjoy autonomous scientific work as well as project activities and have excellent communication skills for the work in larger international teams
- You have a very good command of English and are able to present results convincingly, both orally and in writing

What we offer

- A vibrant research community in an open, diverse and international work environment
- Scientific excellence and extensive professional networking opportunities
- Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
- We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
- Numerous company health management offerings
- Employee discounts with well-known providers via the platform Corporate Benefits
- An employer subsidy for the "Deutschland-Ticket Jobticket"

Application

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-application-system: https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=77719

More information at https://stellenticket.de/204386/TUBS/
Offer visible until 18/06/26