With more than 6,300 employees in research, teaching and administration and its unique profile, TU Dortmund University shapes prospects for the future: The cooperation between engineering and natural sciences as well as social and cultural studies promotes both technological innovations and progress in knowledge and methodology. And it is not only the more than 32,500 students who benefit from that.

1 PhD position

The Department of Physics at TU Dortmund University offers a PhD Position. The duration of the position will be limited to three years. According to the public tariff regulations, the salary is based on the tariff group E13 TV-L with 75 % of the regular work time.

Neutrons play an important role in many fields. Their energy-dependent biological effect on tissue makes them interesting for personal dosimetry, especially since neutrons always occur together with photons in so-called mixed fields. Electronic measurements of neutron flux today are largely based on ionization detectors using $^3$He as sensitive material. These detectors tend to be relatively large and unwieldy. Our group is working on small but robust semiconductor detectors that detect neutrons using dedicated conversion materials.

Your Qualification:
We are looking for a highly motivated graduate student with a scientific degree (Master or equivalent) in physics or medical physics with very good written and oral German (at least B2) and English (at least C1) knowledge, the ability to work in a team, as well as excellent communication and organizational skills. Basic knowledge in nuclear physics and semiconductor detectors as well as experience in experimental work with self-programmed simulation and analysis routines (Geant4, Python, C++) are highly desirable. Furthermore, knowledge in analog and/or digital electronics is advantageous.

Your tasks:
The goal of the PhD project is to build a detector system for real-time measurement of neutron flux, based on silicon detectors and neutron converters. After the development and implementation of an electronic readout system, the detectors will be optimized for application in neutron spectroscopy.

We offer:
The opportunity to do socially relevant cutting-edge research at the interface of dosimetry and detector development; strong scientific and personal development and training opportunities; multiple opportunities to present your research at national and international conferences.

The TU Dortmund University promotes diversity and equal opportunities. Convince us with your personality and expertise. Applications from women will be given preferential treatment in accordance with the legal regulations. It is pointed out that the application of suitable severely disabled persons is desired.

Complete applications including a cover letter, CV, a max. two-page outline of research interests, certificates and at least two contacts for further references should be sent stating reference number w99-23 until 04.12.2023 to:

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