



In the Department of Electrical Engineering and Information Technologie in the group MEEE- Materials for Electrical Engineering and Electronics at the Technische Universität Ilmenau (Germany) is a vacancy for a

PhD position (f/m/d)

to promote their own academic qualifications within the meaning of Section 2 (1) of the German Academic Fixed-Term Contract Act (Wissenschaftszeitvertragsgesetz)

application deadline: 02.11.2025

In the project “Enhanced in-situ online/offline Mössbauer capabilities at ISOLDE (CERN) by fast in-situ laser processing for better measurement yields – eMILY” funded by the Federal Ministry of Research, Technology and Space (BMFTR). The project is granted for 3 years. Starting of the position is envisioned for **01.01.2026** with a duration of 3 years.

The Group of Materials for Electrical Engineering and Electronics at the Department of Electrical Engineering and Information Technology at TU Ilmenau, Germany is looking for a highly motivated PhD student in the area of materials science and engineering and solid-state physics, with particular attention paid to methods of nuclear solid-state physics with solid knowledge of microelectronics and vacuum technology.

The project follows innovative, integrated, and interdisciplinary approaches at the intersection of solid-state and applied physics as well as physical chemistry, with a focus on developing of set-ups for defect analysis and engineering understanding at the atomic scale and consequent defect engineering of semiconductor and insulator compounds. The current position is preliminary planned for 3 years. The project is tried to be extended.

Your tasks

- Development and installation of an on-line Mössbauer modular chamber for ISOLDE/CERN.
- Ion and laser beams simulations, with further development and installation of it.
- Programming and automation of the test setups, development and further enhancement of evaluation software.
- Performing measurements at ISOLDE/CERN and elsewhere
- Participating in joint projects within ISOLDE collaboration, data collection and analysis.
- Evaluation and presentation of results and their scientific use, (e.g. in publications, lectures, reports, international conferences).

Your profile

- *University degree (Diploma/M.Sc. degree) in physics, materials science, chemistry, or a related field with a grade above average.*
- *Profound understanding of solid-state physics and thermodynamics. Ideally experience with semiconductor and insulator materials.*

Following competences are desirable:

- *Experience with Mössbauer methodology, in-situ experiments or other nuclear spectroscopy techniques, system set-up, electronics is a significant plus.*
- *Experience with vacuum systems, cryogenics, or high-power lasers is highly desirable.*
- *Good knowledge of at least one OOP programming language (e.g., Python, C++) for data analysis and desirably also knowledge with languages for instrument control (e.g., LabView, Simatic STEP). Experience with data visualization and statistical analysis tools (e.g., MATLAB, Origin, or Python libraries like NumPy and Matplotlib).*
- *Good communication skills, fluency in English and the willingness to fully commit yourself as part of an international collaboration.*
- *Please provide evidence of the qualifications required for the job by certificates and references.*

What we offer you:

- *attractive remuneration according to collective agreement (as per TV-L) incl. granting of a special annual payment*
- *vacation entitlement of 30 days in the calendar year and additional days off on 24 / 31 December*
- *family-friendly, flexible working time model*
- *VBL - pension scheme in the public sector*
- *wide range of individual training opportunities*
- *extensive health and sports programs*
- *respectful working environment at a renowned university*

For further information please contact Professor Dr. Peter Schaaf, Phone +49 3677 69 3611.

peter.schaaf@tu-ilmenau.de and Dr. Dmitry Ziabkin dmitry.ziabkin@cern.ch