Nuclear Fuel Development at the Research Neutron Source Heinz Maier-Leibnitz (FRM II)

With the Research Neutron Source Heinz Maier-Leibnitz (FRM II) in Garching near Munich, the Technical University of Munich (TUM) operates one of the most powerful and modern neutron sources. TUM's leading scientific position in the field of research with neutrons is underpinned by its cooperation with the Jülich Research Centre and the Helmholtz-Zentrum Hereon within the framework of the Heinz Maier-Leibnitz Zentrum (MLZ). **In this stimulating environment, we offer interesting opportunities for**

Working Student / BSc / MSc Thesis (m/f/d) – Micromechanical Testing of Nuclear Fuel Materials

The mechanical properties of metallic materials can change significantly as a result of manufacturing, thermal treatment and irradiation. In this project, local mechanical properties such as hardness and elastic modulus will be investigated using a modern high-precision nanoindenter. Samples in different conditions will be compared, and the results will be linked to observations from optical and electron microscopy to better understand the relationship between microstructure and material behaviour.The project can be carried out as a student assistant position, Bachelor's thesis or Master's thesis. Planned start: September 2026.

Your tasks:

Investigate the micromechanical properties of metallic materials and coatings systems; Perform hardness and nanoindentation measurements using a modern high-precision nanoindenter; Study how thermal treatment and irradiation influence the micromechanical properties of the materials; Correlate the mechanical properties with observations from microscopy; Analyse the results and contribute to report and scientific publications.

Your skills:

Enrolled in materials science, physics, mechanical engineering or a related field; Interest in mechanical testing and materials characterization; Careful and reliable working style; Basic data-analysis skills are helpful.

More job offers

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MLZ is a cooperation between: