



**Universität Stuttgart**  
Institut für Kernenergetik  
und Energiesysteme

Prof. Dr.-Ing. Jörg Starflinger  
Chair of Nuclear Technology  
and Reactor Safety

**Doctoral  
Student  
(numerical)**

**Passive cooling of  
innovative micro  
nuclear reactors –**

**Project MISHA**

### **Description**

As soon as possible, preferably by 1 September 2022, we are looking for a research assistant (m/f/d) (doctoral student) for a limited period of 4 years.

Within the framework of the BMBF-funded joint project "MISHA", the passive cooling of innovative micro nuclear reactors is to be investigated. IKE is responsible for the design as well as the experimental and numerical investigations of heat pipe prototypes, which are operated with liquid potassium as the working medium. The heat is transferred via the heat pipes to a Joule circuit, which is operated with air or with supercritical CO<sub>2</sub>.

The IKE work will be carried out by two doctoral students who will work closely together. One person will mainly work experimentally, the other mainly numerically.

Doctorate student (numerical): Two different cycles for power generation are envisaged for micro nuclear reactors: Joule cycles with air and with supercritical CO<sub>2</sub>. After implementing the material properties in the thermal-hydraulic system code, the existing models for turbomachinery and heat exchangers are to be improved for both cycles. The cycle models are then to be validated with data from the literature. In addition to the steady-state operating conditions, partial load and start-up and shutdown processes are also to be simulated. The person to be hired has very good programming skills, preferably in FORTRAN or another programming language, and has ideally developed, implemented and validated numerical models during their studies.

Close cooperation with the code developers at GRS and with other PhD students of the joint project is a prerequisite for success.

### **Requirements & qualifications**

We are looking for an engineer (M.Sc.) in nuclear engineering, mechanical engineering, energy technology, process engineering or related fields of study with a very good degree. Fluency in English and knowledge of the German language is a prerequisite for successful communication with national and international partners. Ability to work in a team is expected.

We offer:

- an open and exciting working environment
- a varied and responsible job
- payment up to EG 13 TV-L
- a wide range of further education and training opportunities

The doctoral students are integrated into a doctoral college, which the members organise themselves. A professional exchange at project meetings and national and international conferences is planned. If suitable, there is the prospect of a doctoral degree.

**Applications to be sent to:**  
Universität Stuttgart  
Institut für Kernenergetik und  
Energiesysteme (IKE)

Prof. Dr.-Ing. Jörg Starflinger

[bewerbung@ike.uni-stuttgart.de](mailto:bewerbung@ike.uni-stuttgart.de)



The University of Stuttgart would like to increase the proportion of women in the academic field and is therefore particularly interested in applications from women. Severely disabled persons are given priority in the case of equal suitability.



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