

The Faculty of Mechanical, Process and Energy Engineering, Institute of Thermal Engineering, Chair of Gas and Heat Technology seeks to fill the positions of one:



Scientific Co-worker (m/w/d) – reference number 191-E/2022

Salary: Pay Group TV-L, E13
Working Hours: 100% (Full time, 40 hours per week)
Duration: From 01.10.2022 for 1 Year

The aim of the research work is to investigate numerically the possibility of extracting hydrogen from hydrogen sulphide by thermal cracking or catalytic supported reaction. The project is an international research project, initially for a period of 1 year. Depending upon the results of research activities, the project may be extended further by experimental investigations.

Your tasks are:

As the investigator for the project, CFD Simulation of H₂S reaction in different reactor configurations should be performed. This includes:

- Literature research on reaction mechanisms for thermal or catalytic cracking H₂S
- Understand the theory and the implementation of the in-house code, so that new code can be developed as and when required for better modelling
- 1D numerical simulation and validation of the model using in-house CFD code, where new reaction mechanism for hydrogen sulphide should be provided as input
- 2D numerical simulation using FLUENT or OpenFOAM and validation of the model
- Perform different case studies (both 1D and 2D) and compare the performance
- Keeping touch with international partners, writing quarterly reports and scientific publications

What we offer:

- working at a family-friendly university with flexible working hours as well as an active and cooperative team in the field of CFD and combustion technology
- Remuneration in accordance with the provisions of the collective bargaining agreement for the public service of the federal states in line with personal requirements
- attractive fringe benefits, e.g., capital-forming benefits (VL), company pension plan (VBL), health management
- extensive computation facility

What we expect from you:

- at least a Master degree or a Doctorate degree from University in the field of engineering or natural sciences, e.g., Chemical Engineering, Process Engineering, Mechanical Engineering or equivalent subject area – post-doctoral research scholars may also apply
- thorough knowledge in Chemistry, Thermodynamics, Fluid Mechanics, Heat Transfer, Combustion and Computational Fluid Dynamics (CFD)
- practical experience in working with commercial and (or) open source CFD codes is essential. Experience in handling User-Defined-Variables and User-Defined-Functions will be preferred.
- good knowledge in at least one programming language, preferably FORTRAN, and willingness to learn FORTRAN, if it is not known
- high motivation to carry out independent work

For further information, please contact Prof. Dr. Ray (Tel: 03731-393947, ray@iwtt.tu-freiberg.de) or Prof. Dr. Krause (Tel.: 03731-393940, Hartmut.Krause@iwtt.tu-freiberg.de).

Written applications with the usual documents (only copies) as well as the **reference number (191-E/2022)** should be sent by **12.08.2022** to:

**TU Bergakademie Freiberg - Dezernat für Personalangelegenheiten - 09596 Freiberg
bewerbungen@tu-freiberg.de**

Please enclose a self-addressed and stamped DIN A 4 envelope with your application. Interview costs will not be covered. The TU Bergakademie Freiberg is also looking for scientific personnel from different disciplines. Information under: <http://tu-freiberg.de/ze/jobportal/index.html>