



Karlsruher Institut für Technologie

Karlsruher Institut für Technologie
Personalservice (PSE)

Kaiserstraße 12
76131 Karlsruhe

<http://www.pse.kit.edu>

Research Assistant (f/m/d)
Opportunity to gain a PhD in the research field of atomization

Job description:

The Engler-Bunte-Institut – Fuel Technology Division (EBI ceb) at the Karlsruhe Institute of Technology (KIT), is offering a research assistant position as a full-time job (salary according to TV-L E13). The position gives the opportunity to gain a PhD and deals with research in the field of scaling gas assisted burner nozzles for application in entrained flow gasification at high process pressure.

Entrained flow gasifiers can be operated with biogenic as well as anthropogenic residues out of preparation processes from the circular economy, to gain high quality chemical energy carriers for the subsequent synthesis of basic chemicals and fuels with minimum CO₂-footprint. The aim of the PhD thesis will be the identification of parameters and scaling approaches for the design of gas assisted burner nozzles for entrained flow gasifiers. The research work will be performed in cooperation with an industrial partner.

For the experimental investigation test rigs in technical scale are ready to use. The objective of the experiments is the spatially resolved description of the spray quality, using relevant parameters, like e.g. primary breakup and resulting droplet size. Several optical (high speed camera, shadowsizer) and laser-based measuring techniques (Phase-Doppler-Anemometer, Time-Shift-Technique, Laserdiffraction) are available for the experimental investigation of the whole spray cone. Based on the experimental data, finally scaling approaches for the design of technical burner nozzles have to be developed. Further information you will find on <https://www.itc.kit.edu/57.php>.

Personal qualification:

- Strong Master degree in chemical engineering, process engineering, mechanical engineering, physics or a related field
- Deep knowledge in the field of fluid dynamics
- You enjoy working in a team of young and motivated researchers, project partners and students
- You are highly motivated, single-minded and have an independent work attitude
- Good German and English language skills (written and spoken)
- Sound knowledge in the application of MS-Office software tools
- Any knowledge concerning the operation of optical measurement techniques as well as software tools like Matlab are appreciated

This is what we offer:

We offer you an attractive and modern workplace with access to the excellent equipment of the KIT, a varied work, a wide range of training opportunities, flexible working time models, an

allowance for the job ticket BW and a casino/cafeateria."

Salary: On the basis of the wage agreement of the civil service in TV-L E13.

Organization Unit: Engler-Bunte-Institut – Fuel Technology Division (EBI ceb) at the Karlsruhe Institute of Technology (KIT)

Contract duration: Two years, with subsequent extension for the duration of the thesis

Starting date: At the earliest opportunity

Application up to: September 30, 2021

Contact person for all scientific questions: For further information, please contact:
Dr. Jakobs, tobias.jakobs@kit.edu , Tel.: +49 (0)721 608 26763
Prof. Kolb, thomas.kolb@kit.edu , Tel.: +49 (0)721 608 42560

Candidature: Please send your application including a cover / motivation letter, an academic CV, and all certificates / references to:

Karlsruher Institut für Technologie (KIT)
Prof. Dr.-Ing. Thomas Kolb
Secretary Sabine Hecht
KIT, Campus Süd, Engler-Bunte-Institut, EBI ceb
Engler-Bunte-Ring 1, 76131 Karlsruhe
Preferred as a single pdf-file electronically to:
sabine.hecht@kit.edu

We prefer to balance the number of employees (f/m/d). Therefore, we kindly ask female applicants to apply for this job.

Recognized severely disabled persons will be preferred if they are equally qualified.

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Technology
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