



PhD-Researcher Position

Methodology for a precise model-based characterization of liquid-phase adsorption processes

Temporary Position, Salary Level EG 13 TV-L, 100%

Background:

The DFG-funded research project aims for a methodology which combines dynamic experiments, innovative system identification concepts, and model-based experimental design. We want to contribute to a better understanding of the complex interaction of adsorbate, adsorbent, and process design parameters, including uncertainty quantification of adsorption kinetics and adsorption equilibrium. For this research, we need your support. And we help you to become an expert in this field as well as a valuable member of the Center for Pharmaceutical Engineering (PVZ) at TU Braunschweig. The possibility of a doctorate will be specifically supported.

Employment:

The position is located at the Institute of Energy and Process Systems Engineering (www.tu-braunschweig.de/ines/) in Braunschweig, Germany. The entry date is as soon as possible, and the duration is initially limited to 24 months. The position is part-time suitable.

The payment is made according to task assignment and fulfilment of personal requirements to salary group EG 13 TV-L. International applicants may have to successfully complete a visa process before hiring can take place.

The TU Braunschweig aims to increase the share of women in academic positions. Applications from **female candidates** are very welcome. Where candidates have equal qualifications, preference will be given to female applicants. Candidates with handicaps will be preferred if equally qualified. Please enclose proof.

Task:

The proposed concept aims for a unifying framework blending optimal experimental design, system identification, inverse simulation, and uncertainty quantification strategies. In particular, the focus is on:

- Model-based optimal experimental design
- Algebraic identification and estimation methods
- System inversion and data assimilation
- Dynamic optimization and uncertainty quantification

Who we are looking for:

- a highly motivated candidate with a master degree in (bio)chemical/process engineering, physics, mathematics or related disciplines, with:

- solid knowledge in at least two of the following areas: process systems engineering, dynamic optimization, systems theory, statistics/uncertainty quantification, and optimal experimental design
- good programming skills (Matlab, Python, Julia or R!)
- excellent oral and writing skills in English (language skills in German are beneficial)
- self-initiative and a results-orientated working approach

Application Process:

Applications should be sent by e-mail to Dr.-Ing. René Schenkendorf (r.schenkendorf@tu-braunschweig.de) and must contain the following documents.

- Motivation Letter
- Curriculum Vitae including complete address, phone number, email address, educational background, language skills, and work experience
- copies of bachelor and master diploma and transcript of grades in original language and in English or German translation
- additional Documents must be provided on request

All documents should be in PDF format, preferably in a single file. Personal data and documents relating to the application process will be stored electronically. Please note that application costs cannot be refunded.