Group Leader (m/f/d) Process Systems Engineering: Modelling and Simulation

At the Institute for Energy and Process Systems Engineering (InES) of the TU Braunschweig, there is a full-time academic vacancy in the area of process systems engineering: modelling and simulation. We are looking for candidates with an excellent research record and with teaching experience in modelling and simulation within the field of process systems engineering.

At the InES, our focus is the development of innovative mathematical models and methods, which reveal the interdependencies within energy systems and materials (batteries, fuel cells, electrolyzers) or of factors originating from the component production processes. We aim to enable a targeted knowledge-based optimization of the next generation of electrochemical energy systems. These research activities are embedded in the interdisciplinary Battery Lab Factory of the TU Braunschweig (BLB), which is a joint endeavour of several departments and institutes on knowledge-based cell design as well as the production process of Li-ion batteries.

In addition, we are a member of the Center of Pharmaceutical Engineering (PVZ) of the TU Braunschweig, which brings together scientists from various disciplines to investigate new technologies, processes and approaches in the area of pharmaceutical engineering. In this context, we contribute by creating model-based tools to optimize experimental designs or processes relevant to the pharmaceutical industry – all in close cooperation with industry.

The TU Braunschweig provides access to external and university-owned supercomputers for complex calculations and simulations. In 2017, the TU Braunschweig commissioned the Phoenix Cluster, a supercomputer designed to solve complex mathematical and engineering problems in thermodynamics, structure and fluid mechanics as well as acoustics. As funding and founding members, the InES can utilize this supercomputer to develop and evaluate new models and simulations on site to gain access to larger external supercomputing facilities within Europe and the world.

To continue our efforts, we are looking for a group leader to lead and develop the process systems engineering team. The vacancy offered here is a full-time fixed term position (E14 TV-L, 3 years), which may be eligible for permanent position based on performance of the selected candidate.

You are expected to:

- continue and extend the fundamental and interdisciplinary research direction of the process systems engineering group in line with the ambition of the InES to develop methods, mathematical models and simulations to describe and optimize electrochemical energy storage systems and/or pharmaceutical processes and experimental design;
- have a strong background in modelling/simulation and optimization as they are key tools for the aforementioned objectives;
- strive for excellence in research and thus provide a contribution to the continued development and the interdisciplinary character of the research group and institute;
- publish at the highest scientific level, assist in acquiring resources for fundamental and applied research, develop national and international collaborations and contribute to teaching actives at the institute;
- initiate research collaborations within and beyond the departments and research facilities of the TU Braunschweig as well as national and international partners,
- teach in the field of systems engineering, control engineering and/or elective courses with your topic of choice.
Service:

As academic staff of the TU Braunschweig, you play an important role in society through your research and teaching, but also, in function of the needs and your personal interests, through your participation in the public debate, contributions to policy-supporting research projects for governments from the local to the European level, and participation in research-for-development projects. You take up an active role in councils, educational committees, working groups of the university and in particular, of the faculty of mechanical engineering you will belong to.

Your profile:

- You hold a PhD in Engineering or Science preferably Process Engineering, Theoretical Chemistry or equivalent.
- You have a strong research profile in the field of interest. The quality of your research is proven by publications in prominent international journals. International research experience or industrial experience is an important advantage.
- You have demonstrable qualities related to academic education. Teaching experience is needed.
- You possess organisational skills and have a cooperative attitude. You also possess leadership capacities within a university context.
- The official language used at the TU Braunschweig is German. A good command of German and English is required. The TU Braunschweig provides courses in academic English and German.

We offer:

We are offering full-time employment in an intellectually challenging environment. The TU Braunschweig is a research-intensive university that carries out both fundamental and applied scientific research. Our university is highly inter- and multidisciplinary focused and strives for excellence. In this regard, the InES actively works together with research partners in Germany and abroad (mainly US, Korea, Japan and Israel) and provides our students with an academic education that is based on high-quality scientific research. You will work in Braunschweig, a historic, dynamic and lively city located in the centre north of Germany.

The TU Braunschweig aims to increase the number of women in science and technology. Women are therefore strongly urged to apply. Severely disabled persons are given preference in the case of equal qualification. Proof of disability must be enclosed. Applications are welcome from all nationalities.

Applications should be sent electronically and latest until December, 1st, 2021 stating the reference number RSC-005 to: bewerbungen-ines@tu-braunschweig.de

For more information please contact Prof. Dr.-Ing. Daniel Schröder, d.schroeder@tu-braunschweig.de or visit us at www.tu-braunschweig.de/ines
Twitter: @InES_TUBS

Please note that personal data and documents related to the application process will be stored electronically, and that application costs cannot be reimbursed.