



The organizational and digital optimization of processes is the concept of dr. haasters & partner gmbh. As a solution provider / "engineering office for sustainable digitalization", also active on an international level and focused on innovation. Customers include well-known companies from the SME sector and industry. Focus: Development of software solutions and design of infrastructure or cloud/hybrid setups and, the main focus:

In the engineering sector, dr. haasters & partner gmbh develops systems for the production and utilization of green hydrogen, combined with the above-mentioned digital solutions and AI. This closes the circle. The synergy between hydrogen solutions, artificial intelligence and information technology leads to sustainable efficiency!

Optimization of small-scale hydrogen plants: modelling and simulation

The production of hydrogen through electrolysis is becoming increasingly relevant, especially in the context of the energy transition. Both individual households and small and medium-sized enterprises (SMEs) are looking for sustainable and efficient energy supply solutions to cover their heat and electricity requirements. One possible alternative is to produce hydrogen from the surplus generated by the household photovoltaic system.

In this context, it is important to model the design of such a system and use this as a basis for identifying potential improvements through partial simulations. The first step is to recreate the real system in a simplified model in order to simulatively analyze its energy flows. We are looking for you to support and contribute to this challenging task.

Work packages:

- Familiarization with proton exchange membrane (PEM) modeling
- Modeling with individual components
- Structure of the control system
- Optimization of sub-processes

What you should bring with you:

- IT affinity
- Enjoy familiarizing yourself with new topics
- Reliability

We offer you:

- An innovative field of work
- Start-up thinking in an established environment

Contact: daniel.banuti@kit.edu or karsten@drhaasters.engineering

dr. haasters & partner gmbh | Dipl. Wi-Ing. Dr. Karsten Haasters | Bocksbornweg 62 | 76149 Karlsruhe | www.drhaasters.com

Karlsruhe Institute of Technology (KIT) | Prof. Dr.-Ing. Daniel Banuti | Institute for Thermal Energy Technology and Safety (ITES) | Hermann-von-Helmholtz-Platz 1, Building 420 | 76344 Eggenstein-Leopoldshafen | <https://www.ites.kit.edu>