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!

Technical design and market research of compressor systems and heat exchangers of a hydrogen fuel cell to increase the overall efficiency of the hydrogen the overall efficiency of the hydrogen production plant

The production of hydrogen is becoming increasingly important, especially in the context of the energy transition. Single-family homes and small and medium-sized enterprises (SMEs) need sustainable and efficient energy solutions to meet their heating and electricity needs. Hydrogen offers one of the possible alternatives here.

In this thesis, two parts of the overall system will be examined: a fuel cell heat exchanger and the hydrogen compressor. Both play a decisive role in the overall setup of the water electrolysis system. The aim of the work is to research various options for implementing the aforementioned systems in the overall system. The focus is on economic efficiency, which takes into account not only the purchase price but also the power consumption, maintenance costs and service life of the systems. Bachelor students can choose one of the possible directions based on the results of the preliminary research: Heat exchanger or hydrogen compressor - both offer opportunities to optimize the water electrolysis system.

Work packages:

- Preliminary research
- Design based on three different dimensioning scenarios
- Market analysis of existing systems
- Determine system specifications and prices
- Economic efficiency calculation

What you should bring with you:

- Technical understanding
- Enjoy familiarizing yourself with new topics
- Reliability

We offer you:

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

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