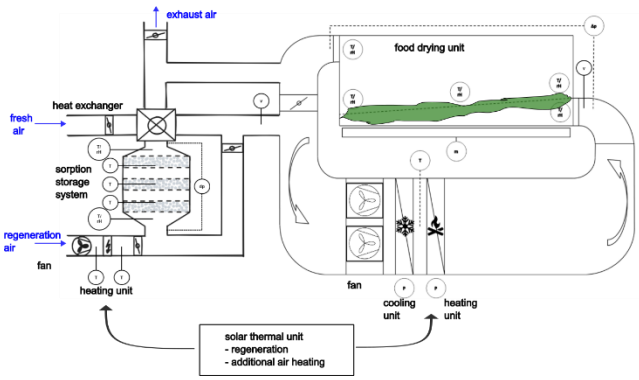
Paid Master's Thesis

Modelling and control of a drying system

We are looking for a dedicated student (m/w/d) of electrical, mechanical or process engineering, or related disciplines, interested in a paid Master's thesis, conducted in cooperation with the Institute of Automation and Control, Graz University of Technology.

Motivation:



Drying of agrigultural products is an emission- and energy-intensive part in food production, since mainly fossil fuels provide the energy needed. We are curently working on a project that aims to make this drying process more climate-friendly by developing a mobile drying system for drying goods from the agricultural sector (herbs, spices or garlic) with 100% renewable energy supply. The mobile drying system consists of an optimized combination of a sorption storage system, a solar thermal collector and heat recovery. The aim of this Master's thesis is to develop and validate a superordinate operating strategy for a prototype (see figure) to achieve high product quality through precise control of the drying good's moisture, and an intelligent combination of the individual components of the drying system to increase efficiency.

Objectives:

- Development and validation of a simulation model of the drying system, with BEST support and based on already existing, simplified models
- Design of model-based control strategies to operate the drying system optimally in terms of efficiency, cost reduction and resource utilization
- Test the new control strategies on the developed simulation model
- Optional implementation and experimental validation of the control on the prototype

Your profile:

- Studies in electrical, mechanical or process engineering, or similar
- Ideally with some background in control or process engineering
- Programming experience with MATLAB / Simulink

Our offer:

- Integration into a dedicated team
- Perspective of participation in follow-up projects after successful completion
- Financial compensation based on student staff salary scheme
- Provision of a work place (remote work from home also possible)

In the interest of diversity, applications from women are especially welcome at BEST!

Contact us:

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