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The Institute for New Energy Systems (InES) is one of three institutes for applied research at Ingolstadt University of Technology (THI). It bundles the research activities in the fields of solar energy technology, energy system technology and bioenergy technology within the THI. Outstanding Bachelor and Master students have excellent development opportunities at InES.

Student Assistants

Numerical flow simulation study for novel
large-area collectors in heating networks

Research Project/Background:

The Institute for New Energy Systems is conducting research on new types of large-area collectors for use in heating networks as part of a research project. In this context, extensive investigations are being carried out on several prototypes of new types of solar collectors. In addition to numerous other aspects, the increase in efficiency is also being analyzed using numerical simulation models. A parameter study is to be carried out to determine the main factors influencing collector efficiency.

Objective of the work:

The aim of this thesis is to determine the main factors influencing the efficiency of the novel collector prototype using a two-dimensional flow simulation model in ANSYS FLUENT.

Tasks:

1. List the most important factors influencing collector efficiency on the basis of a literature search
2. Establishment of a suitable numerical design for the determination of the effect relationships
3. Preparation and adaptation of the simulation model
4. Calculation, preparation and subsequent evaluation and interpretation of the simulation results
5. Documentation of the gain in knowledge

Target Group:

Students of the disciplines:

- Renewable Energy Systems
- Mechanical Engineering
- Computer Science
- Industrial Engineering
- Or comparable courses of study

Time Period: From now on

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