Lehrstuhl für Energiesysteme
TUM School of Engineering and Design
Technische Universität München

Semesterarbeit

(Theoretisch)

Classification of experimental data and evaluation with empirical correlations and ANN

Description:

A good knowledge of the heat transfer coefficient is of the utmost importance to ensure safe and efficient operation of modern steam generators whenever convection is involved in the heat transfer process. In the near-critical pressure range, experimental data are essential for the development of prediction methods. Currently, several experiments are conducted at the high pressure test section at the Chair of Energy systems. In the first step, a database is to be created for this data as part of this thesis. In this context, a classification of the experimental data regarding heat transfer phenomena is to be implemented. In the second step, a literature research is to be carried out with regard to empirical correlations and ANN for the prediction of heat transfer phenomena. These methods are then to be applied to the previously created database and thus evaluated.

Work packages:

- Familiarizing with the topic and literature research.
- Development of a database based on existing measurement data.
- Adaptation of an existing evaluation tool to classify the experimental data.
- Evaluation of experimental data with empirical correlations and ANN.
- Highlighting optimization potential.

Requirements:

- Autonomous work.
- Good knowledge in MATLAB.
- Knowledge in thermodynamics.

Beginn ab: sofort

Kontakt: M. Sc. Jan Oettig

Raum: MW 3708

Tel.: 089 289 15758

Email: jan.oettig@tum.de