Karlsruher Institut für Technologie

Karlsruher Flüssigmetalllabor

Institut für Thermische Verfahrenstechnik

Direct dehydrogenation of methanol to formaldehyde – Ceramic sponges

Direkte Dehydrierung von Methanol zu Formaldehyd - Keramikschwämme

Hiwi/ Master thesis (theoretical/experimental)

Beginn: ab sofort

Chemieingenieurwesen/Verfahrenstechnik, Maschinenbau

Themenstellung:

This work will be carried out as part of the NAMOSYN project, in which an experimental setup for anhydrous formaldehyde production is being designed and built. The dehydrogenation of methanol to formaldehyde takes place in the gas phase using sodium vapour as the catalyst. The water-free formaldehyde can then be used for the production of OME (oxymethylene ether).

Following tasks could be dealt with:

- Literature review regarding ceramic sponges and Direct Resistance Heating
- Conceptual design of a reactor for sponges (mixer and support of catalyst approach)
- Calculations on the subject of mass and heat transfer in a reactor
- Experimental work

The content and scope of the tasks and the wishes of the student can be discussed with the supervisors.

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