



„Investigation on different compact methanol reformer plates under various temperatures and premix-flows”

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Abstract

The experiments show the effects of different compact methanol reformer plates with and without a diffusion layer under various temperatures and fuel flows. The test rig basically consists of an autothermal reformer-technology for single reformer plates. The results to compare are chemical efficiency, conversion rate, pressure loss and the temperature behavior of the plates. The plate 80RP60_s without diffusion layer shows the most suitable results at this test rig through low pressure loss with promising efficiency and conversion rate at reaction temperatures of 280°C and 290°C. An additional medium-term test of 200h allows to evaluate the behavior of a previously unused plate with diffusion layer. Here the significance of a run-in time of at least 20h for a linear degradation and the slow but steady increase of unprocessed MeOH from the analyzed reformat can be observed. It is important to note that all experiments are singular ones and to get reliable results they have to be done at least twice. They are guiding values to get a first impression of these experiments.

Highlights

- Comparison of reformer plates without diffusion layer
- Comparison of reformer plates with diffusion layer
- Comparison of reformer plates with / without diffusion layer
- 200h-Medium-term test of a previously unused reformer plate with Cu diffusion layer

Keywords

Autothermal reforming

Methanol

Comparison of plates

Medium-term test

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