

RESEARCH PAPERS

流向变换强制周期操作合成甲醇反应器的模型化

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摘要 An accurate one-dimensional, heterogeneous model taking account of axial dispersion and heat transfer to the reactor wall, and heat conduction through the reactor wall for methanol synthesis in a bench scale reactor under periodic reversal of flow direction is presented. Adjustable parameters in this model are the effectiveness factors for each of the three reactions occurring in the synthesis and a factor for the bed to wall heat transfer coefficient correlation. Experimental data were used to evaluate these parameters and reasonable values of these parameters were obtained. The model was found to closely predict the reactor performance under a wide range of operating conditions, such as carbon oxide concentrations, volumetric flow rate, and cyclic period.

关键词 [methanol synthesis](#) [reverse flow reactor](#)

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Modeling of a Reverse Flow Reactor for Methanol Synthesis

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Abstract An accurate one-dimensional, heterogeneous model taking account of axial dispersion and heat transfer to the reactor wall, and heat conduction through the reactor wall for methanol synthesis in a bench scale reactor under periodic reversal of flow direction is presented. Adjustable parameters in this model are the effectiveness factors for each of the three reactions occurring in the synthesis and a factor for the bed to wall heat transfer coefficient correlation. Experimental data were used to evaluate these parameters and reasonable values of these parameters were obtained. The model was found to closely predict the reactor performance under a wide range of operating conditions, such as carbon oxide concentrations, volumetric flow rate, and cyclic period.

Key words [methanol synthesis](#); [reverse flow reactor](#)

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