

传递现象

规整填料塔液相流动的计算流体力学模拟

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摘要

关键词 [规整填料](#) [计算流体力学](#) [模拟](#)

分类号

CFD SIMULATIONS OF LIQUID PHASE FLOW IN STRUCTURED PACKED COLUMN

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Abstract

Liquid flow behavior, such as velocity distribution, in the packed column is of considerable importance in determining column performance. Using the volume-averaged method, a computational fluid dynamics(CFD) model was proposed to describe the liquid flow behavior in a structured packing column where the gas phase is stationary. A column packed with Mellapak 350Y had an inside diameter of 150mm and a height of 1000mm was simulated by solving the flow equations. A commercial CFD code, PHOENICS 3.3, was used to predict the fluid dynamics behavior of the liquid phase flow. The simulated profiles of pressure, velocity and concentration of the tracer were presented. The axial backmixing coefficients evaluated by the CFD results were presented and compared with the experimental data and the relative deviation was 3.8%—36.8%.

Key words [structured packing](#) [computational fluid dynamics](#) [simulation](#)

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