

# Investigation of internal elements impact on particles circulation in a fluidized bed reactor

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## Abstract

© Published under licence by IOP Publishing Ltd. A numerical study of the fluidized bed apparatus in the presence of various internal elements is carried out. A chemical reaction for temperature-dependent processes with heat absorption is considered. The task of incoming heated catalyst granules to the reactor is investigated. The main emphasis is focused on the circulation flows of the catalyst particles, heating of the reactor, and the efficiency of the chemical reaction. The analysis of the impact of various design elements on the efficiency of the reactor is carried out. The influence of feeding heated catalyst device design on the effectiveness of whole reactor heating is studied. The influence of the presence of fine particles on the efficiency of the reaction for different reactor design features is also studied.

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