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用多粒模型模拟丁二烯气相聚合的颗粒增长

孙建中, 赵军子, 何斯征, 周其云

Department of Chemical Engineering, Zhejiang University, Hangzhou 310027, China

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摘要 Gas phase polymerization of butadiene by neodymium catalyst was modeled. The effects of mass and heat transfer resistances in the external boundary layer and within particles, sorption of butadiene in polybutadiene, and deactivation of active sites on polymer particle growth and morphology were studied. Simulation results show that the effects of intraparticle mass and heat transfer resistances on the growth rate of polymer particles are insignificant, and that there is no significant effect of mass transfer resistance on the morphology of polymer particles. The simulation results were compared with the experimental results.

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Simulation of Particle Growth in Gas Phase Polymerization of Butadiene by the Multigrain Model

SUN Jianzhong, ZHAO Junzi, HE Sizheng, ZHOU Qiyun

Department of Chemical Engineering, Zhejiang University, Hangzhou 310027, China

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Abstract Gas phase polymerization of butadiene by neodymium catalyst was modeled. The effects of mass and heat transfer resistances in the external boundary layer and within particles, sorption of butadiene in polybutadiene, and deactivation of active sites on polymer particle growth and morphology were studied. Simulation results show that the effects of intraparticle mass and heat transfer resistances on the growth rate of polymer particles are insignificant, and that there is no significant effect of mass transfer resistance on the morphology of polymer particles. The simulation results were compared with the experimental results.

Key words [butadiene; gas phase polymerization; modeling; particle growth; multigrain model](#)

通讯作者:

孙建中

作者个人主页: [孙建中](#); [赵军子](#); [何斯征](#); [周其云](#)

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