

عنوان مقاله:

Modelling an Triple Phase Reactor: Industrial Sodium Bicarbonate Bubble Column Reactor

محل انتشار:

اولین همایش ملی فناوری های نوین در صنایع نفت و گاز (سال: 1389)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

This work deals with the study of the gas-liquid mass transfer, coupled with chemical reactions and the liquid-solid mass transfer, coupled with crystallization. Sodium bicarbonate is a substance which is produced in the middle stages of the soda ash production process. In this precipitation process, carbon dioxide gas is continuously injected into the bubble column reactor which contains carbonate and bicarbonate solutions. In this mathematical modelling, a mole balance has been instituted on flows and components through the bubble column, also utilized anucleation and growth formula for solid phase and the danckwerts theory for mass transfer between gas and liquid phases. The mathematical model can predict effects of several parameters on sodium bicarbonate crystals production, and conversion of carbon dioxide, and crystals size distribution. Computed the mathematic simulator model results with experimental results for validating the model, and investigated effects of different parameters on carbon dioxide .absorbent and sodium bicarbonate product, and crystals size distribution

کلمات کلیدی:

sodium bicarbonate, bubble column, modelling

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