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Multiplicity in Continuous Adiabatic MSMPR Reactive Precipitators

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摘要 The possibility of both concentration and temperature multiplicities has been studied for the case of a continuous adiabatic mixed suspension mixed product removal (MSMPR) reactive precipitator. A process involving homogeneous chemical reaction in first order reaction kinetics with respect to each of the reactive components and subsequent crystallization described by conventional power law growth and power law magma dependent nucleation models is considered. The temperature dependency of each of these kinetics is described by Arrhenius relations. Parameter regions are determined in which multiple steady states exist. The linear stability of these steady states is analyzed by using the Routh criterion approach.

关键词 [multiplicity](#) [MSMPR crystallizer](#) [reactive precipitation](#) [stability](#)

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Abstract The possibility of both concentration and temperature multiplicities has been studied for the case of a continuous adiabatic mixed suspension mixed product removal (MSMPR) reactive precipitator. A process involving homogeneous chemical reaction in first order reaction kinetics with respect to each of the reactive components and subsequent crystallization described by conventional power law growth and power law magma dependent nucleation models is considered. The temperature dependency of each of these kinetics is described by Arrhenius relations. Parameter regions are determined in which multiple steady states exist. The linear stability of these steady states is analyzed by using the Routh criterion approach.

Key words [multiplicity](#); [MSMPR crystallizer](#); [reactive precipitation](#); [stability](#)

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