

Optimal Operating Conditions for Multi-staged Continuous MSMPR Crystallizers with Varying Crystallization Kinetic Parameters

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Multi-staged continuous MSMPR crystallization is essential for producing the large amount of product with low energy consumption. After the crystallization system is constructed, however, the operating condition for its objective should be searched by trial and error analysis. In this work, we search operating strategies for each of crystallization system by changing important parameters of crystallization kinetics. The important parameters is the nucleation constants of primary and secondary nucleation, the orders of nucleation and growth rate and the stage number. The analysis results show that there is a difference of optimal strategy depending on the nucleation rate constants, but it would not be influenced by kinetic rate order and stage number. The results could be leading to the conclusion that if crystallization kinetic parameters are known, it could be easily estimated how the crystallization system should be operated.