

Slug-flow Continuous Crystallization: Fundamentals and Process Intensification

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5.1 Introduction to Slug Flow Crystallization

5.1.1 State-of-the-art

Many continuous-flow crystallizer designs have been developed in recent years for increasing process efficiency and reproducibility, as reviewed in other chapters of this book. “Plug-flow” properties are usually desired in these crystallizers to narrow the residence time distribution and to provide easier scale-up and control of crystal size and shape distribution. Segmented/slug flow has close-to-plug-flow properties even in the laminar flow regime, with nearly uniform velocity profile on the length scale of a slug,¹⁻⁷