

Two-Dimensional CFD simulation of Couette-taylor reactor for crystallization

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Crystallization is one of the most efficient methods to separate materials, especially liquid-solid phase. Couette-taylor reactor is made up concentric two cylinders, inner and outer. Taylor vortex occurs in the gap between two cylinders, when two cylinders have high difference in angular velocity as inner cylinder rotates, and outer one is fixed. Couette-taylor reactor has Taylor vortex that makes pretty good mixing effect. This mixing advantage makes Couette-taylor reactor can be used to obtain high purity and uniform sized material. This study shows how crystallized materials are affected by mixing effect at vortex region. Furthermore, the results present what is proper designs and appropriate parameters with two-dimensional CFD simulation for goals.