

Couette-Taylor reactor for particle size distribution analysis using 2-D CFD

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Taylor vortex is a phenomenon that generated by the gap between concentric two rotating cylinders. Two cylinders have high difference in angular velocity as inner cylinder rotates, and outer one is fixed. Couette-Taylor reactor is made up concentric two cylinders, inner and outer. This study focuses advantage of particle transfer and mixing effect of Taylor vortex. Particles are crystallized under pretty good mixing effect. This mixing advantage makes Couette-Taylor reactor can be used to obtain high purity and uniform sized material. Furthermore, vertical foam of Couette-Taylor reactor is affected by gravity, so enough sized up crystallized materials goes down bottom of reactor. It Using 2-D CFD simulation, the results present what is proper condition and appropriate parameters for particle size distribution.