

### Continuous Couette-Taylor Crystallizer: Distribution Feeding Strategy for Cooling Crystallization of L-Lysine

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A continuous Couette-Taylor (CT) crystallizer exploiting the distributed feeding strategies was developed to promote the mean crystal size of L-Lysine crystal products. The experimental result indicated that the suitable distributed feeding strategies enhanced significantly the mean crystal size up to 60% from 83  $\mu$ m to 133  $\mu$ m with a high productivity at only 5 min of the overall mean residence time, L-Lysine feed concentration of 900 g/l and rotation speed of 700rpm. The effectiveness of the new suitable distributed feeding strategies for the mean crystal size over the conventional feeding strategy was expected in terms of the well control of the regional supersaturation, mean residence time, seeding effect and mass transfer rates in the crystallizer. As the mean crystal size of L-Lysine crystals was determined by the nucleation and growth processes, the rotation speed of inner cylinder, feed concentration, overall mean residence time and cooling temperature was also considered as the critical factors to impact the mean crystal size of L-Lysine crystal products.