

### Agglomeration of NMC hydroxide using Batchelor Flow

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In preparation of NMC cathodic material by using reaction crystallization, the uniform, and spherical agglomerates of NMC hydroxide is highly desired for a high packing efficiency. It is important to investigate the control of the agglomeration process to obtain the desired agglomerates of morphology, and size distribution. In this study, a Batchelor flow is used for effective agglomeration of NMC hydroxide. The rotating disk (RD) crystallization is designed for generation of Batchelor flow. Here, the agglomerate size is reduced as increasing the rotation speed due to high fluid shear. However, the agglomerate size distribution is narrower, and sphericity and flowability of the agglomerates, which lead to higher tap density, is improved with the rotation speed. As a result, the spherical agglomerates with a coefficient of variation of 0.32 and tap density of 1.81 g/cm<sup>3</sup> are obtained at a high rotation speed of 1500 rpm, and 30 min of mean residence time in the continuous RD crystallizer. This results suggested that a Batchelor flow would be highly applicable for the practical production process of agglomerates of NMC hydroxide.