

layer melt crystallizers based on moving belts and rotating drums. In addition, the zone melting method further increases the separation efficiency of both crystallization processes.

11.4.2.1 Crystallization on a Cooled Belt

A cooled conveyer belt could provide the sub cooling surface for continuous separation of melt mixtures.^{38,39} As shown in Figure 11.13, the cooled belt has an angle with the ground and moves upwards, together with the crystal layer which could be scraped off after the countercurrent mass transfer process. The melt is added on the belt to flow downwards and is gradually crystallized on the belt, while uncrystallized residue leaves the system at the lowest part. By adjusting the belt speed and slope, optimal crystal productivity and purity combination could be obtained.

11.4.2.2 Crystallization on a Rotary Drum

In this apparatus, the rotating drum supplies the cooled surface for crystallization.^{40,41} As shown in Figure 11.14, a small part of the drum is immersed in the melt mixture and the sub cooling degree is created by coolant inside the drum. As the cooled surface passes through the molten container, part

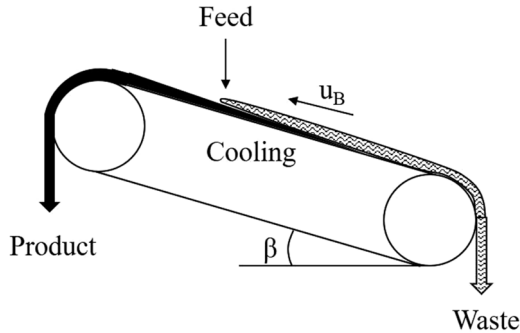


Figure 11.13 Crystallization on a cooled belt. Reprinted from ref. 38, Copyright 1998, with permission from Elsevier.

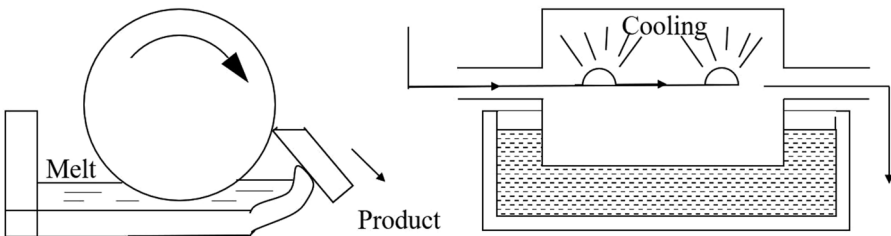


Figure 11.14 Crystallization on a rotary drum.