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Research on Spray Dryers

Naonori ASHIZAWA*

By spray dryers powdery product can be got continuously from feed liquid with a single operation of spray drying. In the step of my study, the following became clear.

Comparing with other-type dryers spray dryer has many advantages; however, in practical designing, they greatly owe to the manufactured pilot plant and past experiences, so that scaling-up of equipments is difficult and there are many points which need theoretical developments of designs. The equipments must be designed rationally after well researching for the characteristics of feed liquid, otherwise, atomized liquid impinges upon the drying chamber wall and besides being unable to be got dry products, there is also an explosion hazard.

In this research, I prepared 24 kinds of grooved core type pressure nozzles, which are now commonly used as atomizers of spray dryers, and tried various kinds of spray test in order to have them well-designed. And besides, I designed and manufactured a laboratory spray dryer and operated it practically. And I got some precious data as a result.

However, it must be required a long time to complete and develop this research.

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