

Applications of Ultrasonic Cutting in Food Processing

What is ultrasonic food processing?

CHEERSONIC Ultrasonic food processing equipment

Frequently Asked Questions about Ultrasonic Cutters

Food cutting support hotline

The application of food cutting machinery

With regard to cutting materials, such as bread, rye bread and cake, a lot of methods can be applied. This paper studies the method of ultrasonic cutting in food processing. There are four major components in the typical ultrasonic food cutting system. They are the power supply, the transducer, the booster and the cutting tool. We not only focus on cutting in food processing through comparing the principle of ultrasonic cutting with conventional cutting, but also address practical applications of ultrasonic cutting in food processing through the performance of ultrasonic cutting of bread, rye bread and cake. The results show that ultrasonic cutting can be applied to cut thin slice of food, which the conventional cutting cannot do. Moreover, in order to extend practical applications of ultrasonic cutting in food processing, a novel kinematic mechanism is proposed to satisfy motions of ultrasonic cutting equipment.

Practical Applications

To evaluate ultrasonic cutting of foods, on the one hand, we have compared the principles of two methods, which are ultrasonic cutting of foods and conventional cutting of foods; on the other hand, we have investigated the performance of ultrasonic cutting of different materials, such as bread, rye bread and cake. The Results and Discussion section shows that ultrasonic cutting in the industry has not only general benefits and advantages, such as excellent cut surface, reduced crumbling, squeezing, debris and smearing, but also a special advantage, such as cutting thin slice, which cannot be realized by conventional cutting of foods. To extend applications of ultrasonic cutting in food processing, we have designed a novel kinematic mechanism of ultrasonic cutting equipment to demonstrate applications of ultrasonic cutting with intermittent motion.

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