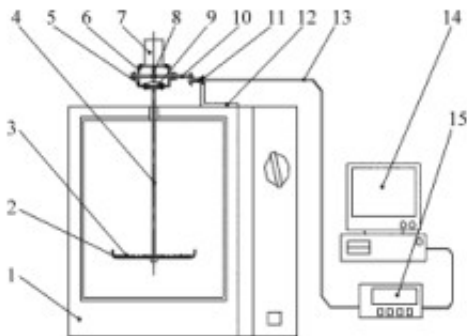


Application of Microwave Drying Technology in Food Industry



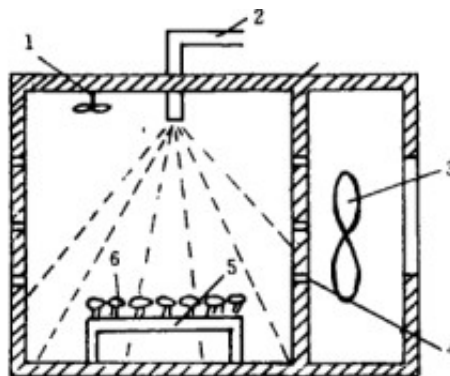
[Abstract] [Microwave drying equipment](#) is a heating technology that has emerged in recent years and is a new technology for rapid dehydration of food. The paper studies microwave technology, analyzes the heating principle and heating characteristics of microwave technology, and the application of microwave technology in the food industry.

[Keywords] [food microwave drying](#); dehydration; application

Introduction

Microwave drying is an emerging drying method.

When drying, the microwave energy directly acts on the medium molecules to convert into heat energy, and the microwave itself has strong penetrability. The dried objects can be heated simultaneously inside and outside, so when using microwave heating, there is no external ripening. In the case of life, heat conduction is not required, so the heating rate is very fast, and regardless of the shape of the object to be heated, the microwave is extremely strong, and the temperature inside and outside of the object to be heated is almost uniform, and the heating is uniform, which greatly improves. Dry quality and dewatering effect.



Microwave heating principle

The microwave itself is not hot, and the electromagnetic energy absorbed by the object is converted into heat energy, so that the heating object itself becomes a heating element. Heat conduction, convection heat transfer, and infrared radiation heating are three conventional heating methods.

Conduction is the most used one in our daily life. We often use heat conduction during cooking in our daily life. The heat is used to contact the surface of the heated object with a heat-

absorbing metal as the medium to form heat conduction. Convection is the conduction between fluids. In the life, boiling water with a kettle is the realization of convection. When the water is opened, the convection of hot water and cold water can be seen. Radiation and heat radiation are also a way of heat transfer. Thermal radiation must have a higher temperature heat source to transmit heat between the object and the object. For example, when we stand beside the heater, we can feel the heat. The sense of transmission to the body is the use of heat radiation for heating.

The microwave heating is to heat the heated object by electromagnetic, so that compared with the conventional heating method, not only the heating time is short, but also the external factor is not needed to heat the object, and the microwave heating does not need to be preheated, and the microwave heating speed itself Quickly, this aspect is directly omitted in the preheating process, which not only ensures the taste of the food, but also reduces the loss of nutrients in the food itself, which is more suitable for the processing of some high temperature resistant foods.