

MICROWAVE HYBRID HEATING SYSTEMS FOR FRUITS & VEGETABLES



In Association with SVCH-Technologii, Moscow (Russia)
ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

ABOUT US

KERONE is now renowned for serving the specialized needs of customers with the best quality and economical process of Heating /cooling and drying products, manufactured in a high-quality environment by a trained and qualified workforce (special purpose machinery)

-  48+ Years Manufacturing Excellence
-  Great Sale Support
-  Highly Customized Product
-  Adherence to Standards
-  Sound Infrastructure
-  Team of experts Delivering Quality
-  Timely Delivery
-  Cost Effective Solutions



KERONE is a pioneer in application and implementation engineering with its vast experience and team of professionals.



KERONE is devoteded to serve the industry to optimize its operations both economically and environmentally with its specialized heating and drying solutions.



KERONE is having immense expertise in manufacturing and implementing various types of engineering solutions.



KERONE is possessing employee strength of more than 280+ experts continuously putting efforts for happy industrial engineering solutions.

WHY CHOOSE US

With decades of expertise, cutting-edge technology, and a customer-centric approach, Kerone Engineering offers tailor-made heating solutions that prioritize quality, flexibility, and cost-effectiveness. Benefit from our commitment to excellence, post-sales support, and innovative solutions for your unique heating needs. Choose Kerone Engineering for reliability, performance, and unmatched value.

MISSION

- ✓ To enhance the value of customer operation through our customer need centric engineering solution
- ✓ We are committed to provide our customers, unique and best in class products in Industrial heating drying and cooling segment with strategic tie-up for the technical know-how with renowned leader in the industry specific segment

VISION

- ✓ Turn into a world leader in providing specialized, top-notch quality and ecological industrial heating, cooling, and drying solutions across the globe.
- ✓ To attain global recognition as the best of quality and environment-friendly engineering solution company.

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Enhance the value of customer operation through our customer need centric engineering solution.

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Introduction

Microwave hybrid heating systems have emerged as a promising technology for the processing of fruits and vegetables. These systems combine the advantages of microwave heating with conventional heating methods, resulting in improved quality, reduced processing time, and enhanced energy efficiency.

Microwave hybrid heating systems are energy-efficient compared to conventional methods. By combining microwave heating with other heating techniques like hot air, steam, or infrared radiation, these systems optimize energy consumption and reduce overall production costs. The precise control over heating parameters also contributes to energy savings by avoiding unnecessary heat loss.

Microwave hybrid heating systems can improve the overall quality of processed fruits and vegetables. By ensuring uniform heating, they help eliminate hotspots and cold spots, leading to consistent product quality. The rapid heating and shorter processing time also help in maintaining the desired texture and reducing microbial contamination.



What is Hybrid Heating System

- | A hybrid heating system is a heating system that combines two or more different heating technologies or energy sources to provide efficient and effective heating in a residential or commercial setting. By utilizing multiple heating methods, a hybrid system aims to optimize energy consumption, cost-effectiveness, and environmental sustainability.
- | The specific combination of heating technologies or energy sources in a hybrid heating system can vary depending on factors such as the local climate, energy availability, and the heating requirements of the building.
- | The key benefits of hybrid heating systems include reduced energy consumption, lower utility bills, increased reliability, and decreased carbon footprint. By intelligently integrating different heating technologies or energy sources, hybrid systems can take advantage of each method's strengths and compensate for any limitations. This allows for more efficient and sustainable heating solutions, particularly in regions with varying climate conditions or fluctuating energy prices.

Microwave Hybrid Heating Systems

Microwave hybrid heating systems have emerged as a revolutionary technology in the realm of food processing, particularly for fruits and vegetables. These systems combine the advantages of microwave heating with conventional heating methods, resulting in improved quality, reduced processing time, and enhanced energy efficiency. This article explores the key features, benefits, and challenges associated with microwave hybrid heating systems, shedding light on their potential to transform the food industry.



Implementation of Microwave Hybrid Heating

Microwave hybrid heating can be implemented for vegetable and fruit preservation to achieve improved shelf life and quality retention. Here's an outline of how microwave hybrid heating can be used for this purpose

- Pre-processing
- Selection of suitable packaging
- Combination of microwave and other heating methods
- Heating parameters optimization
- Monitoring and control
- Cooling and storage



Pre-processing

The vegetables or fruits intended for preservation are first prepared by cleaning, sorting, and cutting them into suitable sizes or shapes. This step helps to remove any contaminants and ensure uniformity in the heating process.

Selection of suitable packaging

Packaging plays a crucial role in preserving the quality of fruits and vegetables. It should be microwave-safe and allow for proper ventilation to prevent the accumulation of moisture. Packaging options such as microwave-safe plastic containers or breathable films can be considered.



Combination of microwave and other heating methods

In a microwave hybrid heating system, other heating methods can be combined with microwave heating to achieve better preservation results.

Infrared heating

Infrared heating can be used in conjunction with microwaves to achieve more uniform and controlled heating. Infrared radiation penetrates the surface of the produce and heats it, complementing the deep penetration of microwaves.

Conveyorised Microwave Heating System

A conveyorised microwave heating system is a specialized setup that combines the use of microwaves with a conveyor belt to heat or cook products continuously as they pass through the system. It is commonly used in various industrial applications, such as food processing, where a high volume of products needs to be heated or cooked efficiently.



Heating parameters

The heating parameters, such as microwave power, exposure time, and temperature, need to be optimized for different types of fruits and vegetables. This optimization ensures efficient preservation while minimizing undesirable effects such as texture changes or nutrient degradation.

Monitoring and control

Monitoring temperature and moisture is crucial during preservation. Temperature and humidity sensors provide real-time feedback to control heating, ensuring optimal conditions and preventing overcooking or undercooking.

Cooling and storage

It is essential to monitor the temperature and moisture content during the preservation process. Temperature sensors and humidity sensors can be used to provide real-time feedback and control the heating parameters accordingly. This helps maintain the desired preservation conditions and prevents overcooking or undercooking.



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