



Press Release

11/7/2022

Microwave Chemical Co., Ltd.

Microwave Chemical and Asahi Group Foods to Jointly Demonstrate Microwave Freeze Drying Technology Delivering Significant Time Reduction and Higher Quality Instant Food Products

Microwave Chemical Co., Ltd. (Suita-city, Osaka; CEO: YOSHINO Iwao; referred to below as "we/the Company") installs microwave-based multi-stage freeze dryer in Asahi Group Foods Ltd. (Sumida-ku, Tokyo; CEO: KAWAHARA Hiroshi) to proceed to demonstration studies towards commercialization.

Freeze drying is a means of vaporizing water and the like supplying heat to frozen solids, and is widely used to obtain solid materials, such as instant foods or to powder heat-sensitive drugs, such as antibodies and oligonucleotides. However, due to the indirect nature of heat transfer, it presented a challenge as drying typically was a time-consuming process.

The company has been expanding the application of the freeze-drying technology developed in collaboration with the Japan Aerospace Exploration Agency (JAXA) in obtaining water from frozen ground in space to other areas such as the food and pharmaceutical fields; confirming that the use of microwaves, which directly heats materials, can significantly shorten the freeze-drying time and improve the quality of the end-product.

We have been working with Asahi Group Foods Ltd., a leading manufacturer of freeze-dried foods, jointly developing microwave freeze-drying technology for the production of their instant foods and have identified the possibility of up-scaling to a multi-stage freeze-drying systems for R&D purposes.

By combining Asahi Group's freeze-drying technology and our know-how in microwave technology we hope to further promote such technological advancements.

Microwave Chemical plans to release multi-stage microwave freeze dryer for mainly R&D

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Make World.**

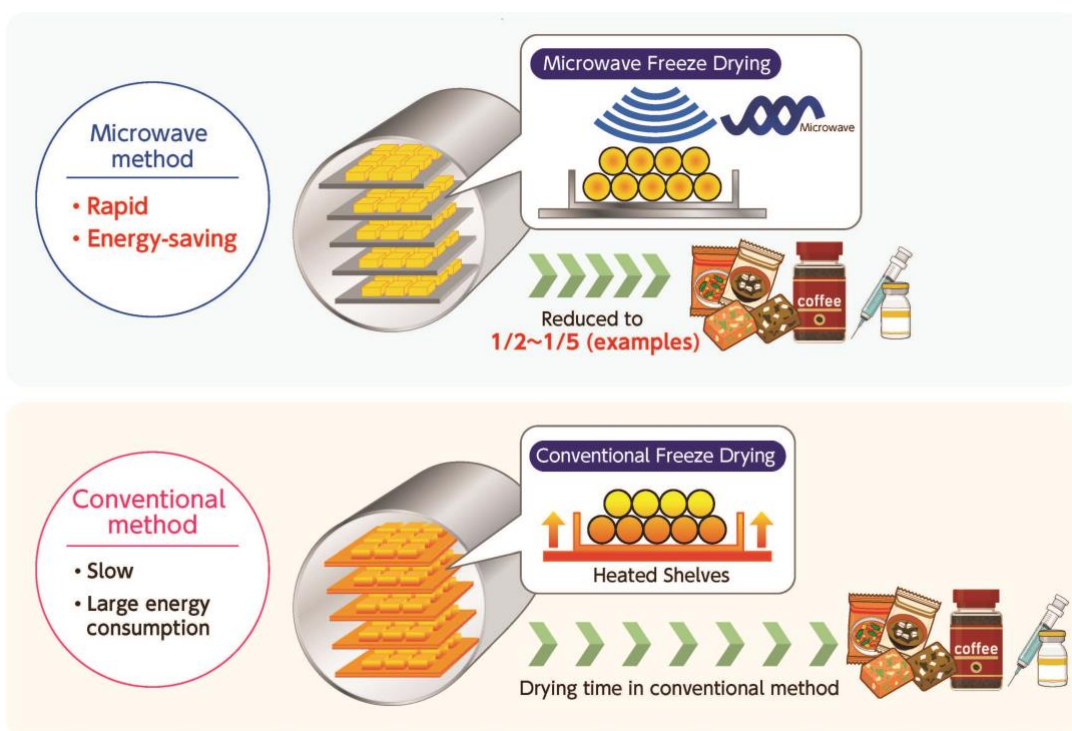
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use in cooperation with freeze dryer manufacturer.

【About Microwaves】

Microwave is an electromagnetic wave which is frequently used for microwave oven and communication applications. Microwaves can transfer energy to materials directly and selectively. As microwaves can be generated from electricity, through its use of renewable energy, this technology contributes to decarbonization.

【Comparison with conventional freeze drying】



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