

# サーマルビデオカメラによる熱画像の温度分布と 放射熱による蒸発量測定

——水の易蒸発化処理による食品・農林水産品乾燥の  
高性能化とシステム化（その3）——

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## Determination of Temperature Distribution from Thermal Images and Determination of Evaporation from Radiant Heat by the Use of a Thermal Video Camera

——Development of the High-Performance Drying Technology of the Cake for  
the Industrial Process Made Japanese Wheat Noodle “Udon” (part 3) ——

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### Abstract

This report relates to the application of high-voltage vaporization technology utilizing a vacuum effect in the drying process of foods and agricultural, forestry and fishery products. The improvement in efficiency was demonstrated by a study conducted under stabilized temperature and humidity conditions using an air-conditioned room and was confirmed with thermal images using a thermal video camera. The amount of water evaporation was estimated from radiant heat determined with a thermal video camera and these estimates were compared with the measured values of water evaporation. This study aims to research the applicability and industrialization of this system.

The following conclusions were drawn from the study :

- 1) Humidity has greater effects on the drying characteristics than temperature.
- 2) High voltage and reduction in pressure have greater effects on the drying characteristics than when these means are not employed.
- 3) Thermal images from a thermal video camera that show temperature distribution indicated that water evaporation from samples starts from the external part of the sample.

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