

## 報 文

## 湿潤布の保温力を継続的に測定する装置の試作

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## Prototype device to continuously measure the insulating capacity of moist cloth

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## Abstract

The insulating capacity of clothes decrease when they are wet or moist, and this has a large effect on the body. Evaporation of water from wearing moist clothes that are being worn occurs from heat supplied from both inside and outside the fabric. The former is the wearer's body temperature, while the latter is the temperature of the environment. The authors made a prototype device that can continuously measure the amount of heat from inside cloth and changes in the weight of cloth as it dries. The investigation whether the prototype device can be practically applied was conducted in an artificial climate chamber with temperature of 33°C, relative humidity of 60% and current of air equal to or less than 0.5m/sec. Five types of cloth were used as samples in the experiment: cotton, wool, polyester, acrylic, and nylon.

The prototype power consumption monitor was able to continuously measure the amount of heat lost from cloth. In addition, it could continuously measure the drying rate in both the periods of drying at a constant rate and drying at falling rate. The development of technology for instruments to measure sensations is important for the development of comfortable clothing material. Use of this prototype power consumption device is promising for continuous measurements of the insulating capacity and drying rate of moist cloth.

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 falling rate period 減率乾燥期