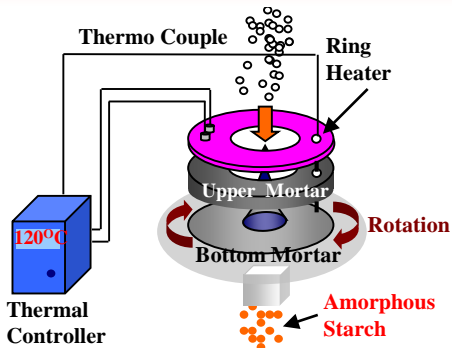


# Novel Method for Making Amorphous Starch by Milling without Adding Water

Professor Akihiro NISHIOKA

## Novel Method for Making Amorphous Starch

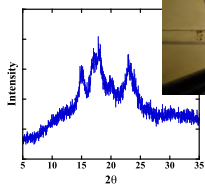


Amorphous starch can be obtained by "only" milling!!



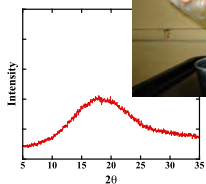
Developed Milling Machine(lab. scale)

Crystalline Starch



Low viscosity

Amorphous Starch

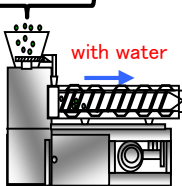


High viscosity

## Starch/Plastic composite

General Method

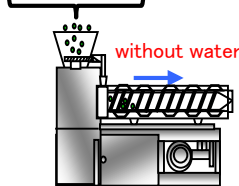
Plastic  
Water Starch



Kneader

New Method

Plastic Amorphous Starch



Kneader

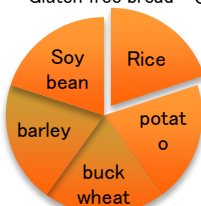
## Application for other grains



Gluten free bread



Gluten free cream puff



Our technique can be applied to all grains!!

Content :

We have focused on "starch", which is one of the natural polymers. In our research, novel technique for making amorphous starch by only milling without adding water was investigated. By using our developed amorphous starch, gluten free food such as pure rice bread, rice cream puff can be easily obtained. Furthermore, our amorphous starch can be applied to the field of plastic/starch composite. We have been estimating possibilities and applications of our amorphous starch in various engineering field.

Appealing point:

One of the my "Appealing point" is to be able to develop new products by using our novel research results and its knowledges.

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Research Interest : Polymer materials  
Polymer processing  
Food rheology

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