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DISINTEGRATION PROCESSES IN THE FOOD INDUSTRY INNOVATIVE TECHNOLOGY

Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT

Osterfelder Strasse 3
46047 Oberhausen, Germany

Dipl.-Ing. Josef Robert
Head of Department Process Engineering
Phone +49 208 8598-1150
josef.robert@umsicht.fraunhofer.de

Lukas Rüller, M.Sc.
Membrane and Food Technology
Process Engineering
Phone +49 208 8598-1553
lukas.rueller@umsicht.fraunhofer.de

www.umsicht.fraunhofer.de

Within the food industry the process of disintegration plays an essential role as it directly influences the product quality as well as the overall yield. Here new and innovative technologies offer promising approaches.

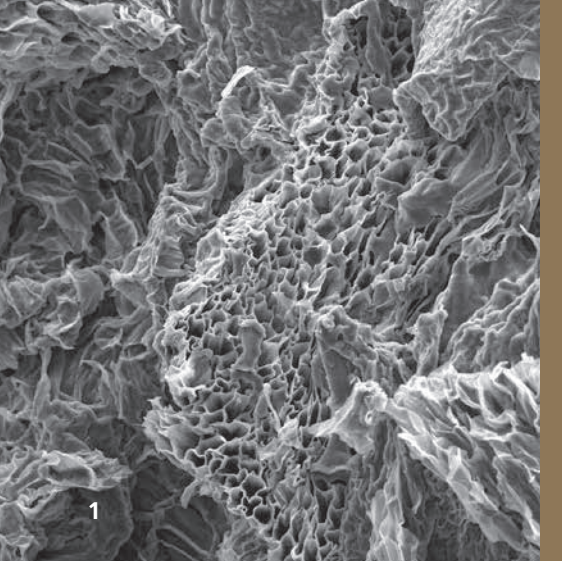
With regard to this Fraunhofer UMSICHT and its partners develop and optimize technical devices in combination with specific disintegration processes. Aiming at a complete utilization of raw materials existing processes can significantly be improved and entirely new technical process steps can be established.

Keywords

- Improvement of yield & efficiency in the food industry
- Disintegration of raw materials and product streams by:
 - High-power ultrasound
 - High-pressure homogenizer
 - Enzymatic processes

Industrial sectors

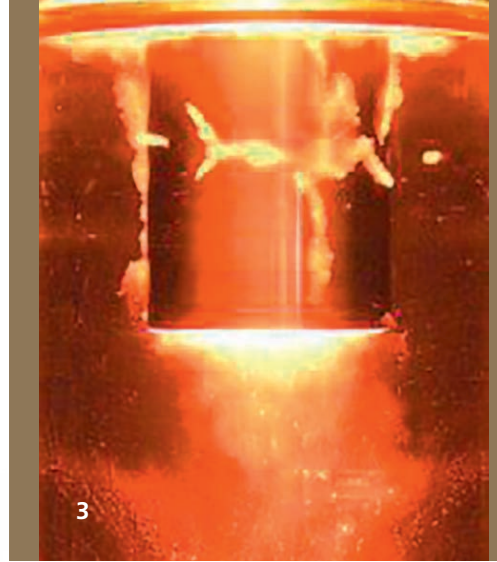
- Food industry:
- Fruit and vegetable processing
 - Soy, almond, coconut, etc.
 - Grain drinks
 - Juice and beverage industry
 - Duck weed, algae, etc.



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- 1 SEM-picture of dried soy okara.
- 2 Ultrasound device (Bsonic).
- 3 Image of cavitation (Bsonic).

Technological specification

High-power ultrasound:

- Patented ultrasound technology (magnetostrictiv) enabling oscillation amplitudes of up to 100 µm at high power
- Cavitation and bubble implosion causing cell disruption

High-pressure homogenizer:

- Disruption of cell suspensions by high-pressure up to 2000 bar
- Short disruption time with optimum temperature regulation

Biotechnological processes:

- Cell disruption by enzymatic treatments

Possible fields of application:

- Soy, almond, coconut, etc.
- Fruits, vegetables and juice pomace
- Duck weed and algae
- Oil press cakes etc.

Our service

From an ecologic as well as an economic point of view an optimized utilization of resources in the food processing industry is a crucial matter. Therefore, Fraunhofer UMSICHT does application-oriented and practical research. We would like to support and advise you concerning:

- Application potential of innovative disintegration processes including possible concept development and implementation
- Analysis, optimization and development of process steps in the food industry
- Lab and pilot testing in order to identify optimum utilization strategies

Your benefit

- Yield maximization by optimum utilization of raw materials
- Cost reduction by implementation of more efficient technologies and processes
- Additional utilization possibilities by processing of side streams and residues
- Sustainable and ecologic production and processing of food by complete utilization of resources