# MANUFACTURING AND EQUIPMENT COVERAGE IN FSTA®

**Trusted by researchers, scientists, students and government bodies in over 150 countries across the globe, FSTA is the definitive way to search over fifty years of historic and emerging research in the sciences of food and health.**

**Covering a wide range of interdisciplinary material, FSTA includes a wealth of international manufacturing and equipment content including:**

### All aspects of processes and equipment used in food and beverage manufacture: from the raw material through to the consumer

- Handling, sorting, cleaning of raw materials
- Processing equipment and processing lines
- Equipment cleaning and hygiene, cleaning in place
- Packing and labelling equipment
- Research articles, trade articles, standards and patents

### Processing and preservation methods

### Process control systems

- Analytical methods, online monitoring and sensors
- Process modelling

### Plant design and safety

- Pilot plants
- Automation, robotization and intelligent systems
- Digitalization, Industry 4.0 and Smart factories

### Energy conservation and environmental impact

- Sustainability
- Heat exchange technology
- Process water management
- Recycling and waste management
- Revalorization of wastes and by-products

### Packs and labelling

### Distribution, transport and retail

- Logistics, handling, warehousing and storage
- Retail display
- Consumer purchasing behaviour and attitudes

### Patents

- Equipment design
- Cans, packs and other containers for beverages and foods
- Closures and sealing

## USING FSTA FOR YOUR MANUFACTURING AND EQUIPMENT RESEARCH

**Example search questions**

- What are the parameters for effectively rendering pathogens in sausages inactive using high pressure processing?
- How is digital transformation being applied in food factories? *(Sample record on following page)*
- What are labelling guidelines for compressed gases used in breweries?
- What is the role of calcium in the fouling of heat plate exchangers?
- What are strategies for maximizing safe water recycling in CIP operations?
- How can by-products of sugar manufacture be revalorized?

## SOURCE EXAMPLES

**Manufacturing and equipment content is drawn from a wide variety of sources including journals, patents, books, reports and more.**

**Here are just some of the many manufacturing and equipment focused journals included within FSTA, chosen to illustrate the diversity and breadth of content:**

- Drying Technology
- Food & Machinery
- Food Manufacture
- Guidelines of the European Hygienic Equipment Design Group
- Journal of Food Engineering
- Journal of Food Process Engineering
- Journal of Light Industry
- Manufacturing Confectioner

## SAMPLE FSTA RECORD FOCUSED ON MANUFACTURING AND EQUIPMENT

**Applications of process and digital twin models for production simulation and scheduling in the manufacturing of food ingredients and products.**

**Author:** Koulouris, A.; Misailidis, N.; Petrides, D.

**Correspondence Address:** Department of Food Science and Technology, International Hellenic University, Thessaloniki, Greece.

**Source:** Food and Bioproducts Processing, Volume:126, Pages:317-333

**DOI:** 10.1016/j.fbp.2021.01.016

**Published:** 2021

**Document Type:** Journal Article

**Abstract:** Food Processing Industries are bound to increasingly adopt digital technologies in order to ensure product safety and quality, minimize costs in the face of low profit margins, shorten lead times and guarantee timely delivery of an increasing number of products despite production dead times and uncertainties.

The concept of a digital twin put forward in the context of Industry 4.0 encompasses a digital model of the production model that mimics the physical system, interacts with it and can be used to design, monitor and optimize its performance.

In this paper, the application of integrated process and digital twin models in food processing is discussed in the context of process simulation and production scheduling.

The modeling challenges, opportunities and special characteristics that distinguish food from other process industries are also discussed.

The potential benefits from implementing a digital modeling approach on a food process are presented with the help of a large-scale brewery case study.

**Keywords:** BREWERIES; ECONOMICS; FOODS; MODELLING; PROCESSING; PRODUCTION

## FURTHER INFORMATION

Visit the IFIS Publishing YouTube channel to view training videos or join a training webinar at [www.ifis.org/fsta-user-training](www.ifis.org/fsta-user-training).

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