



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

**Food**UPV

**Instituto Universitario de Ingeniería de Alimentos**  
*Food Engineering Research Institute*

UPV



## About us?

We are a structure of the Universitat Politècnica de València (UPV) dedicated to research in food science and technology.

The UPV stands out in this area, appearing in the top 100 worldwide according to the Global Ranking of Academic Subjects index of the Shanghai Ranking.





## Mission

Research into the development of products and processes that contribute to safer, healthier, and more sustainable food production, with greater organoleptic and nutritional quality.

To promote the technology transfer to the industry.

To train highly qualified professionals and establish a long-term link with them.





## Team

Our team is made up of 47 researchers and around 150 people (including hired researchers and MSC students), divided into 11 research groups and 6 R&D support people.

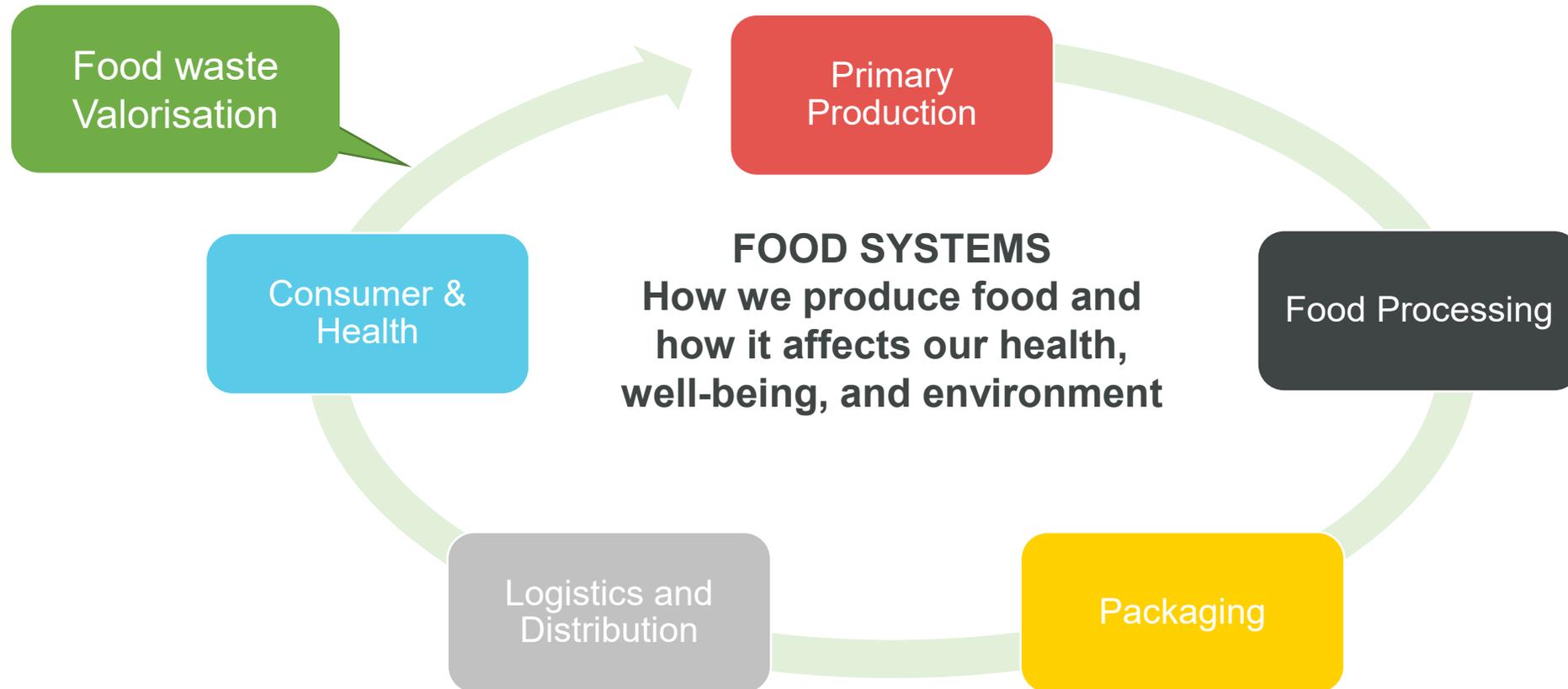
## Facilities

- 5,000 m<sup>2</sup> of facilities
- 8 general laboratories
- 29 specific laboratories
- 3 pilot plants
- 2 tasting rooms





## Food Science: FoodUPV



## FOOD PROCESSING

### Efficiency Optimization

Removal of unwanted compounds

Improved Thermal Processes

Non-thermal pasteurization

### 3D Printing Fermentation

Extraction & Purification

## RESEARCH PROJECTS AND RESULTS

**HISTAFOOD:** New strategies to reduce the incidence of intolerance and poisoning derived from the presence of histamine in food.

**ANTIVIBEM:** Development and application of functionalized materials with antiviral, antibiofilm, anti-enzymatic, and antimicrobial activity in the food industry.

**BIOZOOSTAIN:** Sustainable use of zooplankton as a by-product.

**Cocoa alkalization method** which reduces the consumption of water, energy, and humidity and maintains organoleptic characteristics.

**Salting process in vacuum bags** and selective permeability bags for a more homogeneous and efficient process.

**Extraction method with supercritical fluids assisted by ultrasound** for compounds with high added value.

**Microorganisms inactivation method with supercritical fluids** and ultrasound without loss of quality due to heat treatments.

Optimization of the **biopreservation process** of table olives.

## PRODUCT DEVELOPMENT

Innovation  
Virtual Tastings  
Functional Foods  
Reformulation  
Alternative Proteins  
New Food Products  
Products for specific groups  
Consumer Studies

## RESEARCH PROJECTS AND RESULTS

**3D-CAPS:** 3D printing of food matrices to obtain healthier foods by incorporating microencapsulated components with a non-homogeneous distribution.

**THINKINGOOD:** Development of methodologies to obtain new products with high added value from aquaculture species.

**HYDROLEOFOODS:** Oils structuring through the use of hydrocolloids as a strategy to replace highly plastic saturated fats. Rheological, structural, and sensory research.

**PREFERFRUITS:** Development of predictive models of consumer preferences for fresh fruits based on the characteristics of the fruit and their conscious and unconscious response.

Development of pastry products with **insect flour** and **moringa**.

Development of pasta with and without gluten based on **tiger nut flour**, **wheat bran**, and/or **legume flour**.

Gluten-free crackers made from **chickpea flour**.

**Healthy solid fat** for the improvement of the nutritional profile.

**Semi-dehydrated persimmon**.



## FOOD QUALITY AND SAFETY

Fraud Detection  
Non-Destructive Analysis  
Modelling and Simulation  
Sustainability Assessment  
New technologies  
Carbon Footprint  
Non-invasive control  
Sensors

### RESEARCH PROJECTS AND RESULTS

**ULTRATEX:** Comprehensive management of the corn pancake production process based on the non-destructive and non-invasive characterization using non-contact ultrasound of the textural properties.

**KAKIRUB:** Gumminess of the persimmon pulp as a disorder caused by low storage temperatures. Biochemical mechanisms involved and strategies to mitigate its incidence.

**POLENET:** Automatic pollen analysis using computer tools: Application to the monofloral classification of honey.

Ultrasonic inspection system for process control.

System for the discrimination of fruit according to its maturity.

A sensor of myopathy damage in birds for human consumption.

Non-invasive system for detecting breaks in the cold chain in frozen meat.

Electronic tongues and noses for cured ham.

Control of processes with structural changes through image analysis by laser patterns.

## PACKAGING MATERIALS

### Films

Recovery of agri-food waste

Multi-layer films

Biodegradable

Antioxidants and antimicrobials

Biopolymers

Active Packaging  
Sustainability

## RESEARCH PROJECTS AND RESULTS

**ACTPACKML:** Use of phenolic acids to obtain active multilayer materials for food packaging.

**VARBIOPAC:** Valorization of agri-food waste to obtain biodegradable active materials for active food packaging.

**RES4PACK:** Comprehensive use of agri-food waste and its application in the development of active biodegradable packaging for food.

**WASTE4BIOPACK:** Revaluation of lignocellulosic waste for the development of low-cost biodegradable food packaging.

**SUCCIBIOPACK:** Synthesis of biodegradable polymers based on renewable succinic acid with custom-designed properties for sustainable food packaging.

Development of **biodegradable transparent mulch** with the capacity for weed control and soil conditioning.

## NUTRITION AND HEALTH

ICT Tools for Nutrition  
Metabolism monitoring  
Personalized Nutrition  
Nutritional Validation of Ingredients  
In vitro digestion  
Bioactive compounds  
Functionality and toxicity  
Gastrointestinal Simulation

### RESEARCH PROJECTS AND RESULTS

**MYBEEF:** Conceptualization for the creation of foods with efficient oral processing based on sustainable proteins with improved digestibility for the elderly.

**ENZIMAPP:** PERT Adjustment in Early Childhood with Cystic Fibrosis.

**PEDIMIC:** Simulation models of digestion in paediatric patients with Cystic Fibrosis: gastrointestinal conditions and intestinal microbiota determinants towards Precision Nutrition.

**LEGUMAX:** Development of new healthy and sustainable products based on fermented legumes for the prevention of childhood overweight.

Development of non-invasive measurement techniques and technologies: in vivo, for the **diagnosis of GERD**, and in vitro, for the analysis of release of GERD-attenuating compounds.

New strategies to reduce the incidence of intolerance and poisoning derived from the presence of **histamine** in foods.



# FOOD WASTE VALORIZATION

Food waste  
By-products  
**Valorization**  
High-Value Products  
New Ingredients  
Sustainability  
Bioactive Compounds  
End-to-end use

## RESEARCH PROJECTS AND RESULTS

**REVAL 2.0:** Integration of revalued agri-food by-products in circular economy models.

**FUNBIOPEST:** Obtaining powdered products from white cabbage packaging lines for use as a sustainable functional ingredient and the integrated management of weeds.

**RECICLASALUD:** Promotion of local agriculture through the revaluation of fruit by-products for their beneficial effect on the intestinal microbiome.

**ALG-ALIM:** Comprehensive use of the carob tree and its fruit in human nutrition.

**MORNUPAY:** Improvement of the production and quality of moringa leaves in Paraguay to contribute to the nutritional contribution of disadvantaged groups.

Powder's obtention for food use with **functional properties** from waste from vegetable packaging lines.

## Mechanisms for collaborative research and technology transfer

- Research collaborative projects: Horizon Europe, COST actions, etc.
- Research contracts and tenders.
- Patents licensing.
- Spin-offs.
- Training programmes: Erasmus+, MSCA, etc





UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA

Food<sup>UPV</sup>

THANK YOU FOR  
YOUR ATTENTION

[www.food.upv.es](http://www.food.upv.es)

[foodupv@upv.es](mailto:foodupv@upv.es)