OFICINA DE PROYECTOS EUROPEOS

# PROMOTIONAL PROFILE

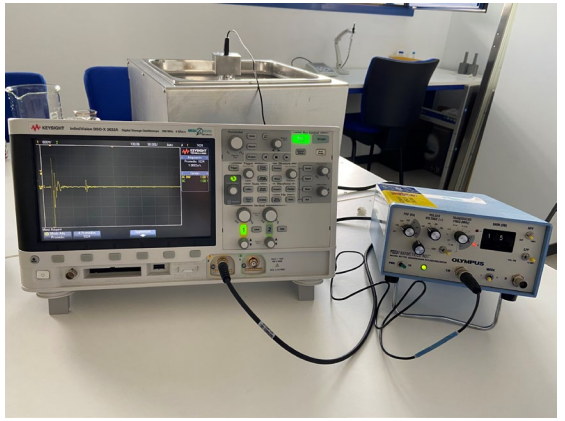
## HORIZON EUROPE

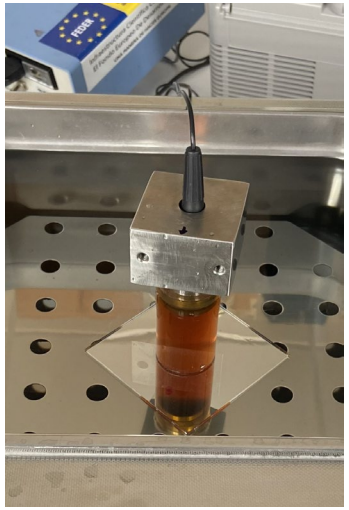
**RESEARCH GROUP:**
**Non-Ionizing Radiation and Ultrasonic Inspection Group (NIRUIG)**

# WHO WE ARE

## (Research group description – maximum 700 characters with spaces)

- The Non-Ionizing Radiation and Ultrasonic Inspection Group (NIRUIG), based at the University of Extremadura (Spain), is composed of five permanent researchers.
- We have developed novel non-destructive ultrasonic methods for food quality control, enabling real-time, in-line analysis without waste. Our work has resulted in high-impact publications (e.g., Ultrasonics, J. Dairy Sci., Food Control) and participation in national and regional projects over the past 25 years.
- Using these ultrasonic techniques represents an innovation as a complement or alternative to traditional techniques. Our approach thus combines Acoustics and Food Science to achieve sustainable, fraud-resistant food production.





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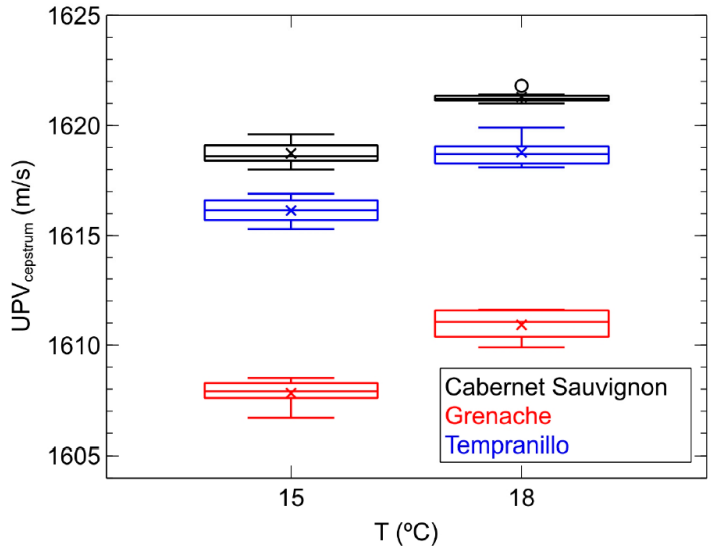
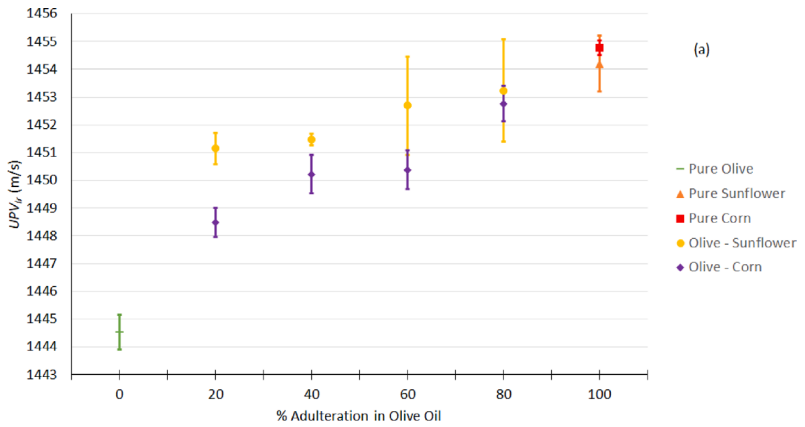
# WHAT WE OFFER

## (expertise, infrastructures and skills offered – maximum 700 characters with spaces)

- We apply Acoustics to Food Science through non-destructive ultrasonic methods.
- Our technique identifies acoustic parameters—related to wave speed, attenuation, and frequency content—transmitted through food. This 'acoustic DNA' enables food characterization and helps detect potential adulteration or fraud.
- These methods preserve physicochemical and sensory properties while enabling fast, low-cost, portable, automated, and waste-free analysis, fully aligned with green and white chemistry principles.
- Our lab at the University of Extremadura is equipped with transducers, pulser-receivers, signal generators, oscilloscopes, and MATLAB-based tools.

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# OUR INTERESTS IN Horizon Europe or other international calls and why? Please explain how you cover parts of the scope in a topic and what expected results you contribute to and how

**Topic of interest:** HORIZON-CL6-2025-02-FARM2FORK-08 – *Controlled Environment Agriculture (CEA)*

**Our contribution:**

We apply ultrasonic, non-destructive methods to diverse food products (oils, wines, dairy, meats, etc.). We can assess current CEA crop varieties, identify innovation gaps, and explore future trends and technologies, such as biotechnology, supporting wider adoption of CEA.

**Expected outcomes:**

A clearer understanding of CEA's technological needs, sustainability, and environmental impacts; improved knowledge on economic viability and environmental performance; identification of promising crop varieties.

**Policy alignment:**

Our approach supports the CAP, the European Green Deal, and the EU Climate Law—contributing to sustainable, efficient, and innovative agri-food systems.

# ENTITY (CONTACT DETAILS)

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