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PROMOTIONAL PROFILE

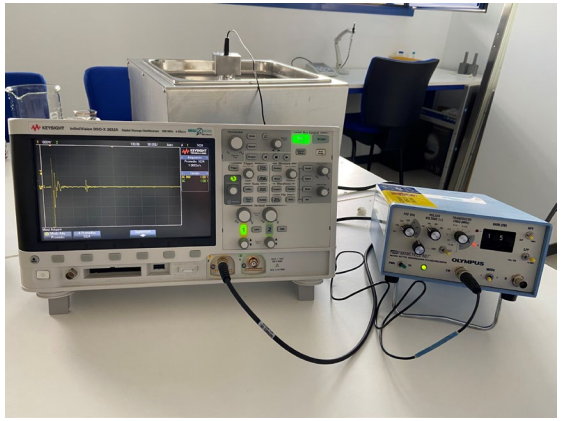
HORIZON EUROPE

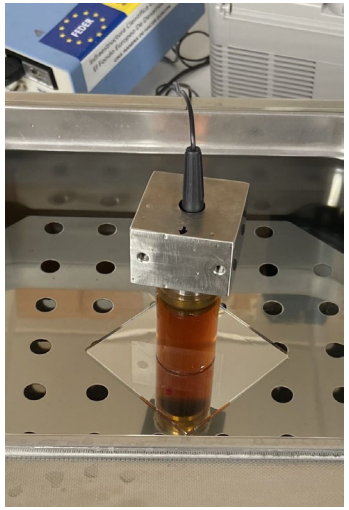
RESEARCH GROUP:
Non-Ionizing Radiation and Ultrasonic Inspection Group (NIRUIG)

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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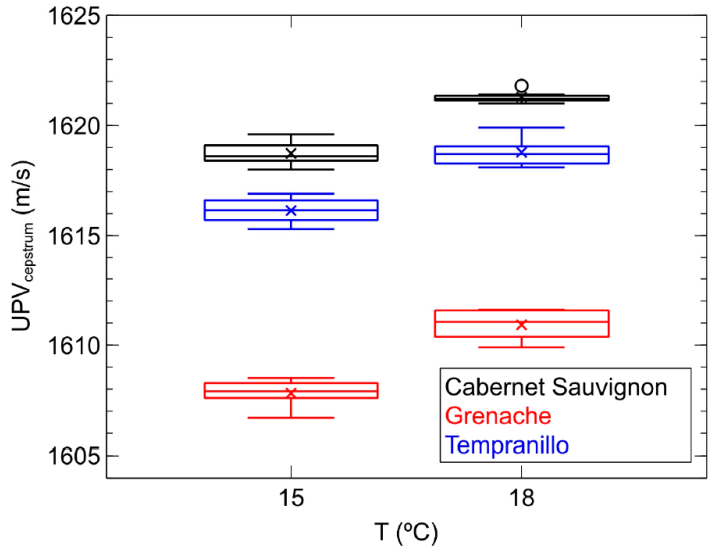
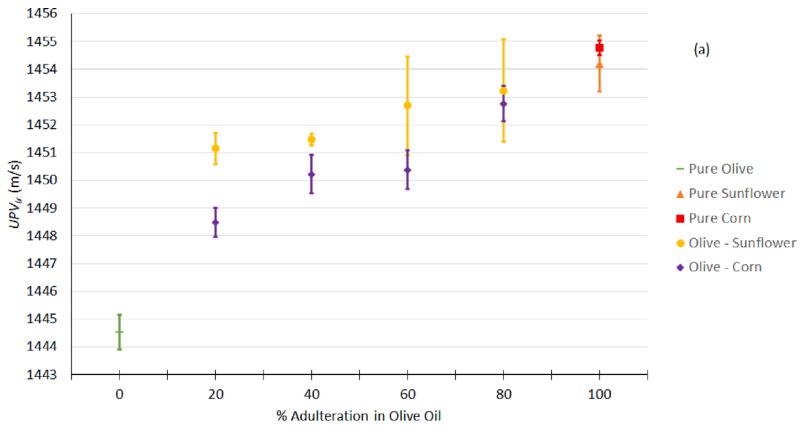
WHAT WE OFFER

(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-03 – *Making food systems more resilient to food safety risks.*

Our contribution:

We apply non-destructive ultrasonic methods to various foods, offering rapid, clean, and cost-effective tools to detect fraud and improve food safety. Our experience supports the deployment of market-ready innovations to close current gaps.

Expected outcomes:

Stronger resilience to food safety risks, enhanced uptake of technological solutions, improved coordination among actors across the value chain, and reduced carbon footprint via clean technologies.

Policy alignment:

Fully aligned with the European Green Deal, the Farm to Fork strategy, and the Food 2030 Pathways for Action 2.0 (2023), particularly the future food safety systems roadmap.

ENTITY (CONTACT DETAILS)

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