
Sensing
FOOD for
SAFETY
PhasmaFood

Background

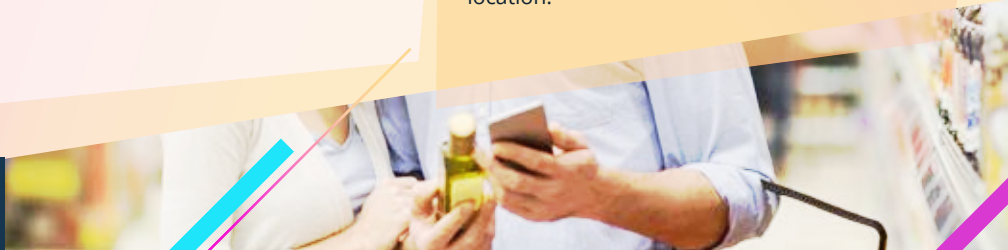
Exposure to biological and/or chemical hazards constitutes a major threat for the food industry, and food producers and consumers are increasingly aware of food safety and authenticity. Conformance to food quality standards is a primary consumer expectation as well as a key selling point for the European economy.

PhasmaFOOD focuses on food safety issues by developing a highly portable and reconfigurable smart food-sensing device. The PhasmaFOOD device will be able to detect critical food quality elements such as spoilage, adulteration and biological hazards.

The PhasmaFOOD solution

Heterogeneous micro-scale photonics will be employed in the development of the smart miniaturised PhasmaFOOD device. The device will host three sensor types: two spectrometers and a micro-camera. In addition, three light sources will be integrated with the device to support its sensing functionality.

A dedicated PhasmaFOOD mobile app will allow end-users to interact with the device. The captured data will be communicated via wireless mobile networking to the PhasmaFOOD back-end. Analysis results will immediately be sent to users, who will be able to access them at any time and from any location.



Applications of PhasmaFOOD

The market for food quality detectors is developing rapidly, and PhasmaFOOD is tapping into this strong potential, proposing a new paradigm for smarter microsystems with high compactness, low cost, multifunctionality and portability.

The PhasmaFOOD approach will be applied and tested on the following food safety use cases:

- **detection of mycotoxins in various grains and nuts** using ultraviolet testing;
- **detection of early signs of spoilage and spoilage in fruits, vegetables, meat and fish** using spectroscopy scans combined with estimated product expiration dates;
- **detection of food fraud,** focusing on evidence of adulteration of alcoholic beverages, oil, milk and meat.

PhasmaFOOD enables consumers and food producers to carry out on-the-spot food quality sensing and shelf-life prediction.

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