



Photonics applications in Agrofoods

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ABSTRACT

At the Photonics for Agrofoods and Environment Laboratory, we rely on our expertise in the area of the interaction of light with matter for the development and application of specialized optical spectroscopic analysis methods in the field of agrofoods. Specifically, we employ an innovative approach based on the combination of optical spectroscopy with machine learning and artificial intelligence technologies for the quick monitoring of the characteristic substances contained in food samples, with little or no processing.

This way, we can record the optical spectrum that is the characteristic "fingerprint" and reflects the chemical composition of a sample. Different samples have a different fingerprint and the detected differences or similarities are used for:

- identification,
- origin and quality control
- detection of adulteration

These techniques are quick and much "cheaper" than the time-consuming and costly conventional analytical techniques.