

ULTRASHORT-PULSE DIFFUSE REFLECTANCE UTILITY

Innovations and Benefits - Diffuse reflectivity measurements with ultrashort pulses are accomplished using a near-infrared laser that can enter biological samples, allowing to analyze to some extent their content in a non-destructive manner. The pulses are reflected by the internal structure of the sample and detected. The different delays of the pulses provide morphological information while their intensity reveals the absorption bands of the compounds present in the sample. This technique enables the analysis of samples in a range of several centimeters thickness.

Uses - Detection of optical parameters useful for quality analysis of bulk biological samples.

Past and Present Activities - Investigation and determination of optical parameters able to infer the freshness or degradation of fruit and vegetables. Enables monitoring of the dosing of chemicals with high nutritional value in the sample. Evaluation of aging of fruits subjected to storage (project MAGAZZINO VIAGGIANTE).



Characteristics:

CUSTOM The service is carried out at laboratory experimentation level (TRL = 3) but does not require end user involvement