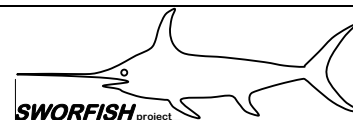




## Near Infrared Spectrometry



### Technical details



#### Fourier Transform Near Infrared Spectrometer

**Type:** VECTOR 22n

**Producer:** Bruker Optics GmbH

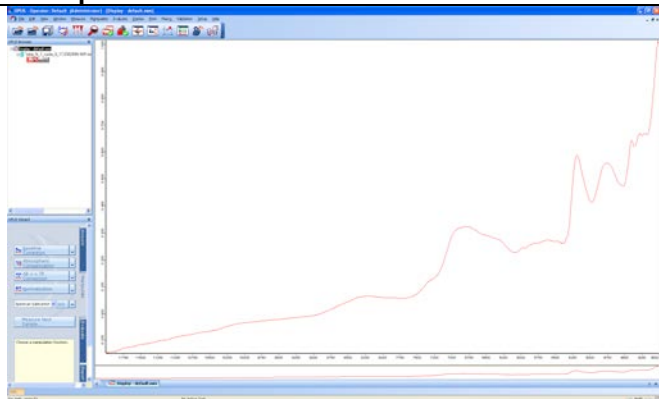
**Spectral range:** 4000-14000cm<sup>-1</sup>

**Resolution:** 8cm<sup>-1</sup>

#### Measurement modes:

- Reflectance (fiber optic probe)

### Example of results



The result of measurement is a NIR spectrum. It must be pre-processed (normalization, derivative, multiplicative scatter correction, etc.) before further interpretation.

The spectra include information about the functional groups of molecules charged with dipole momentum (such as -OH, -CH, etc.).

The series spectra can be used for:

- Quantifying/qualifying chemical properties
- Identification of unknown samples
- Prediction of selected properties
- others

### Technique description

Near infrared spectroscopy is an analytical method based on the optical interferometry. The modulated infrared light is emitted to the object and part of the light reflected/transmitted is acquired by the system in the form of interferogram. By applying the Fourier Transform it is possible to obtain the spectra.

As the infrared energy absorption by molecules is very selective and proportional to the quantity of functional groups excited, it is possible to interpret the spectra linking it to selected material properties.

### Comments

The instrument is part of the Wood Quality and Non-Destructive Testing Laboratory led by Martino Negri, PhD.

**Contact person: Martino Negri (IVALSA/CNR) and Anna Sandak (Sworfish)**