

# X-ray densitometry

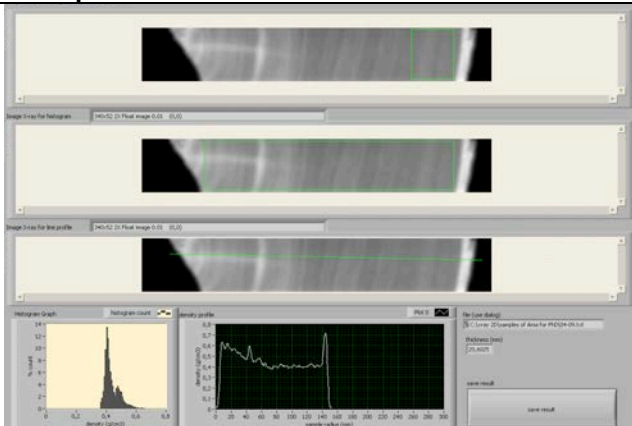
## Technical details



### X-ray densitometer

**Type:** custom  
**Producer:** IVALSA/CNR  
**X-ray source:** W bulb  
**X-ray source energy;** 60kV 50mA (max)  
**X-ray detector:** scintillator (Hamamatsu)  
**Motion control:** three axis (CT ready)

## Example of results



The result of measurement is an image of x-ray absorbance of the sample. After system calibration it is possible to estimate the density distribution and map it over the image area.

The instrument is ready for further upgrades (computer tomography). In that case a volumetric distribution of density can be estimated.

## Technique description

By assuming that the x-ray attenuation coefficients of wood and water are the same it is possible to link the x-ray attenuation to matter (wood) density. It is important however to control the sample thickness and provide this data for computation.

## Comments

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

The instrument is a prototype, under continuous development at IVALSA/CNR.

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