

# AFM characterization of the mechanical properties of wood at the cell wall level: a prospective study (WG4)

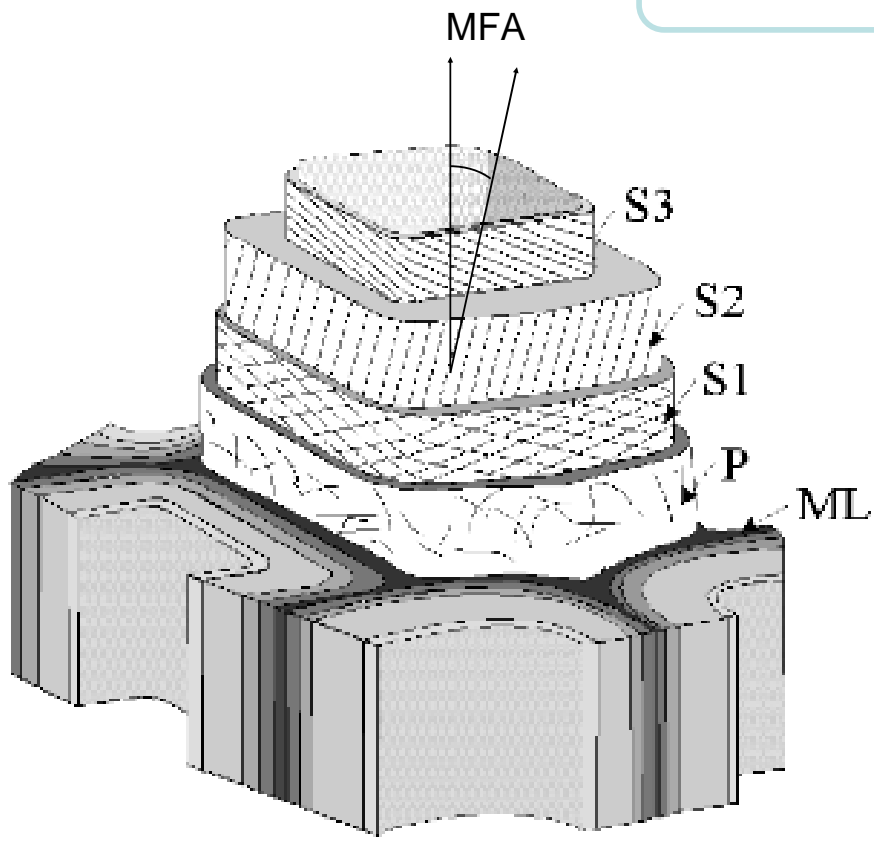
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LAIN – Université Montpellier 2 -France

# AFM characterization of the mechanical properties of wood at the cell wall level: a prospective study

## Wood cell mechanical properties

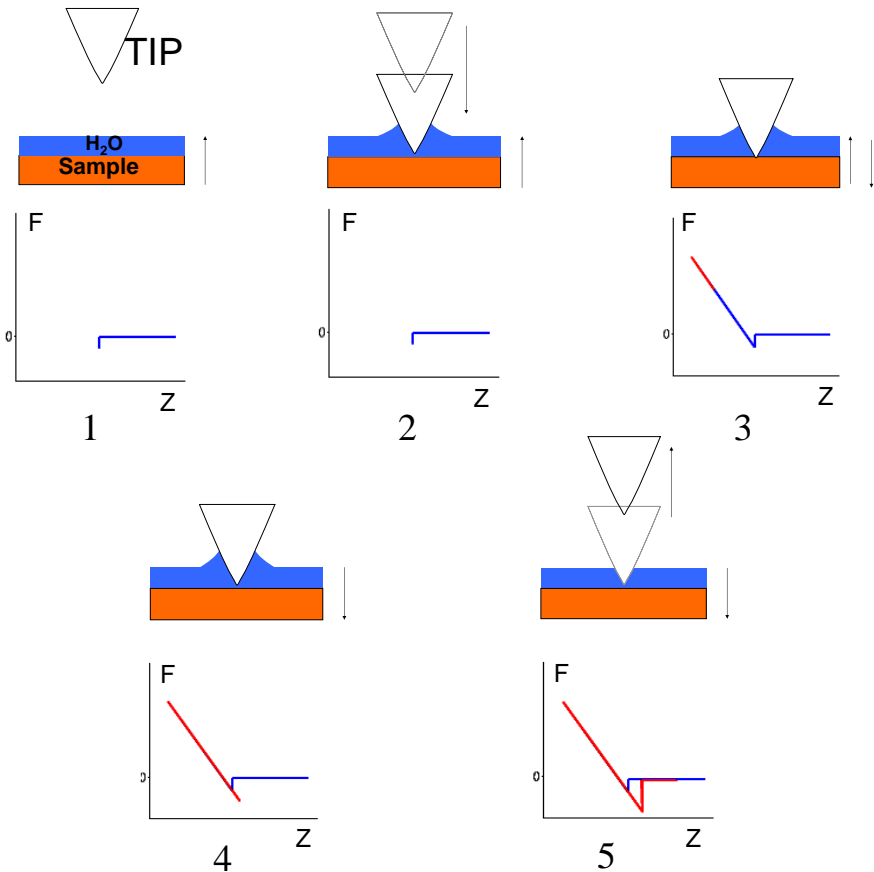


	ML	S1	S2	G
Holm oak wood fibre	5-7	8-9	9-10	10-12
Other holm oak wood fibre	15		9-10	
Boco wood fibre	10			12-18

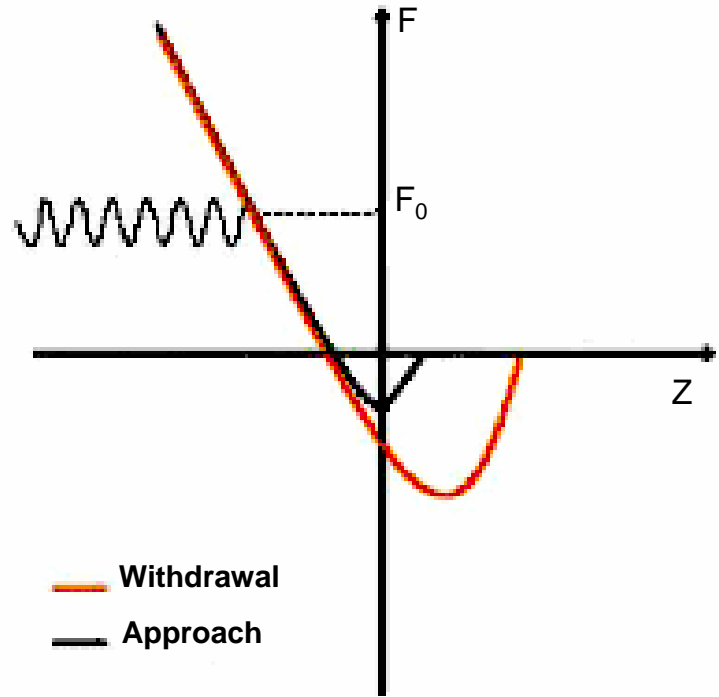
*Examples of Young modulus values*

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## AFM techniques



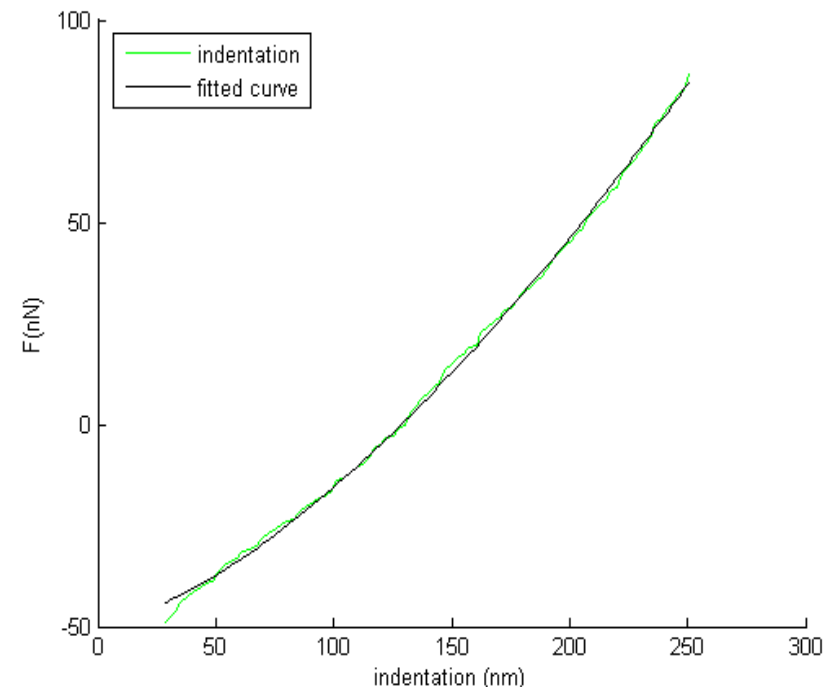
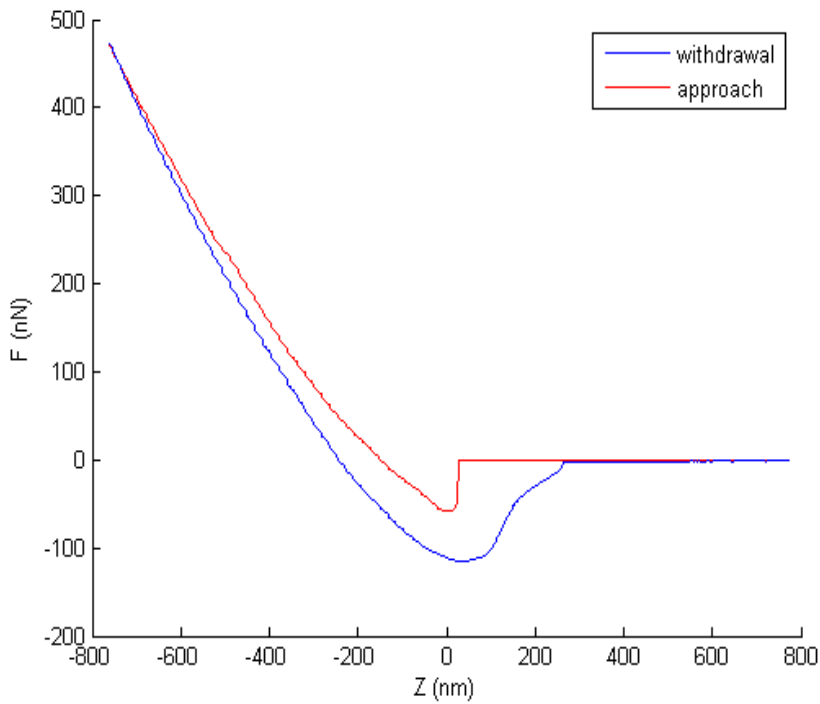
Nanoindentation



Force modulation microscopy

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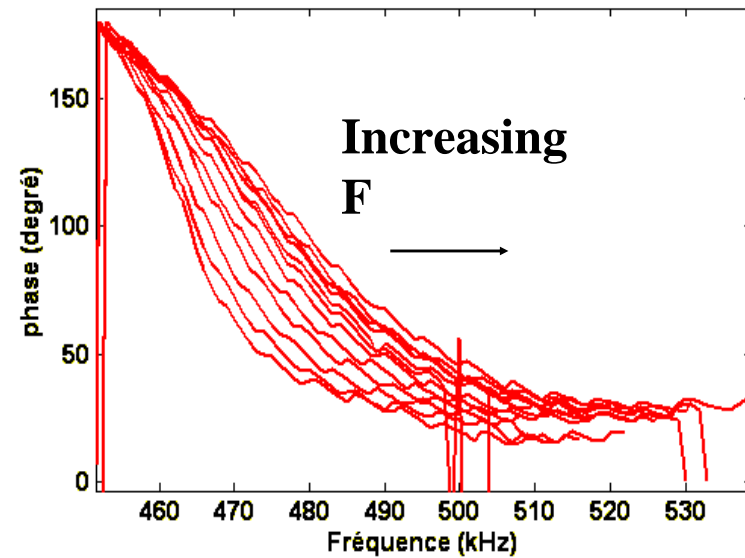
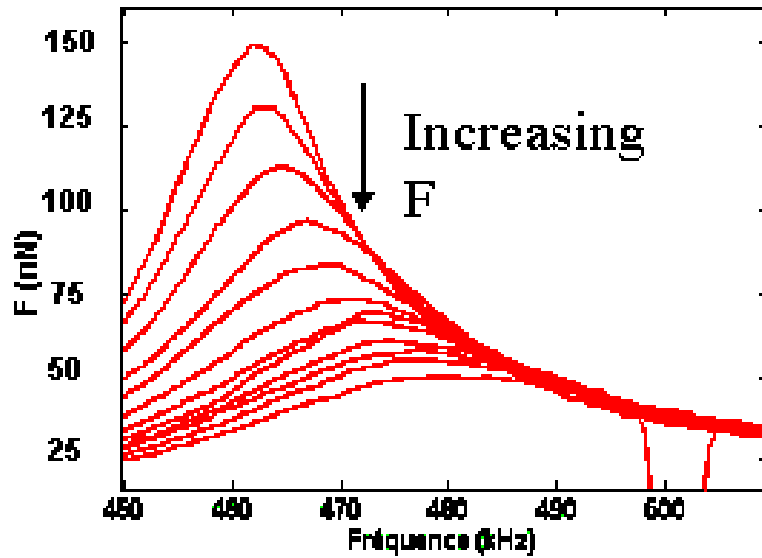
## Results



## Nanoindentation

# AFM characterization of the mechanical properties of wood at the cell wall level: a prospective study

## Results



Force modulation Microscopy

AFM characterization of the  
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Results

Topography

+ mechanical properties

280 kHz

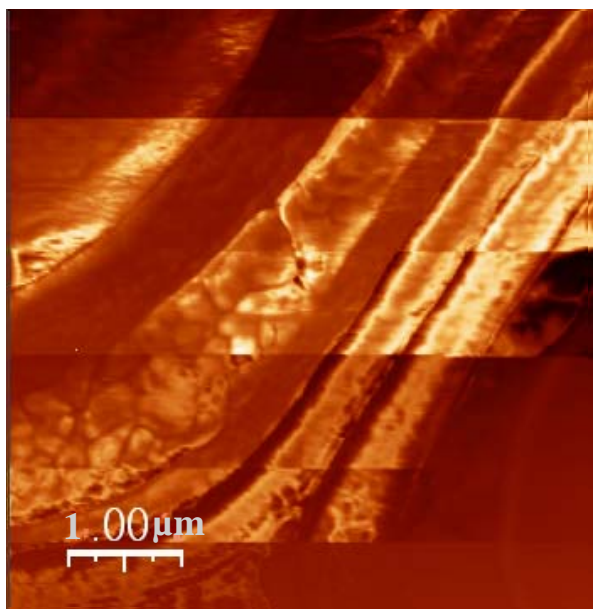
285 kHz

290 kHz

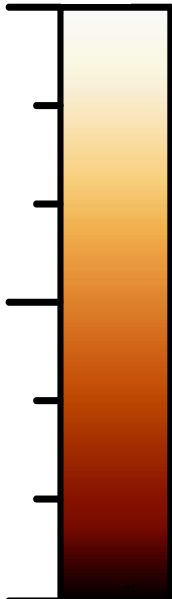
295 kHz

300 kHz

305 kHz

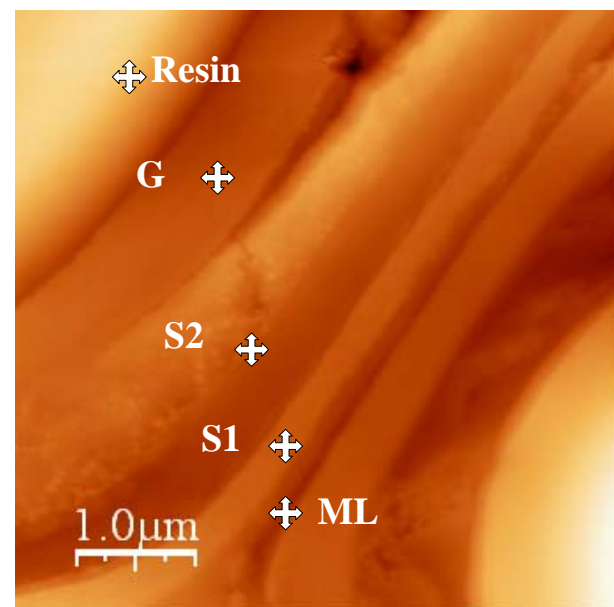


1,02 mV

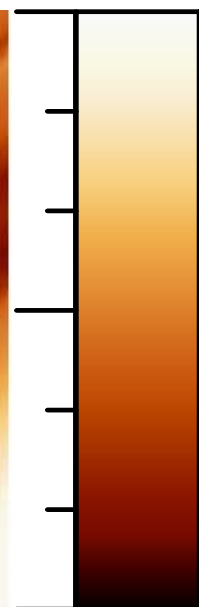


0 mV

Topography



140.00 nm



0.00 nm

Force modulation Microscopy