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## Study of the ageing behaviors of new wooden materials obtained through eco-friendly methods

Polymeric components of wood and its porous structure, allows the modification of its properties and obtaining of new materials eco-friendly through the combination of temperature, humidity and/or the mechanical force action effects. During the treatments, in wood take place mechano-chemical transformations which depend on the processing parameters and the material properties.

The first aim of the project is to obtain important information concerning the microstructure of different untreated and densified wood species using eco-friendly methods through the application of modern analytical techniques. For this, fragments from different wood species -untreated and densified, will be studied through optical microscopy in normal and polarized light, scanning electron microscopy, spectroscopy (FT-IR, 2D IR correlation spectroscopy, X-ray diffraction) and thermal methods (thermogravimetry, differential scanning calorimetry).

The second aim is to improve the knowledge concerning the influence of environmental factors, especial microorganisms on these wood species to optimise the treatment parameters.

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