



## Lightwood: innovative wood and polyurethane based composites

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### ABSTRACT

The project Lightwood is promoted by IPV and has the objective of potentiate the results of I&D obtained in the project LightFillers (QREN), which permitted to develop a lightweight panel, based on the combination of wood particles and a polyurethane foam. An alternative lignocellulosic raw-material, wild thistle (*Cynara cardunculus*), an agroforestry residue from the cheese production was also tested. Several cardoon cultivars have been established in the “Serra da Estrela” region and only the fluorescent part of the plant is used. Considering that the use of polyurethane foam represents a significant portion of the composite of synthetic origin, it has been proposed to replace it with a completely biosourced binder system. The combination with a starch-based foam yield composites with a very interesting combination of low density and good mechanical performance.

This project aims to demonstrate the technical feasibility of this composite to be used for furniture in order to increase the competitiveness of the upstream (wood-based panels producers) and downstream companies (furniture manufacturers) in the centre region of Portugal. Members of the team will participate in Salone

Satellite integrated in the Salone Internazionale del Mobile – Milano 2019, together with a team of designers, to present to the furniture industry the potential of these innovative materials. A patent application describing the production process will be submitted in the beginning of 2019.

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