

MAN-MADE CELLULOSIC FIBERS FROM EUCALYPTUS GLOBULUS – A BRIDGE TO A SUSTAINABLE FUTURE

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ABSTRACT

The textile industry has the challenge to increase its production to meet the growing needs of the consumer market, while the global pressure for more ecologically correct and sustainable processes has become progressively significant. In this scenario, the production of man-made cellulosic fibers (MMCFs) from wood pulp has gained prominence not only as a solution for the so-called cotton gap but mainly as a biodegradable and sustainable alternative to synthetic fibers. Currently, the Portuguese economy has traditional and high-quality industries for textile, and pulp and paper production, resulting in an intermediate gap that corresponds to the transformation of pulp into MMCFs. This gap is fulfilled with external production, reducing thus the sustainability of textile production since it requires higher fossil fuels consumption by transporting and increases the country's dependence on foreign economies.

With that in mind, Caima (a leading Portuguese eucalyptus pulp producer with high efficiency), together with eNTI (a multi-sectoral R&D institution in the fields of smart and functional materials), CITEVE (a Technological Institute providing technical support and services to companies acting in the textile & clothing business), and University of Aveiro (an experienced research group in the field of wood chemistry) are working to boost the knowledge of the Portuguese industry and scientific community on MMCFs production, thereby further strengthening Portugal's wood-based economy.

The advances achieved by the consortium to produce 100 % MMCFs on a laboratory pilot scale from an optimized Portuguese *Eucalyptus globulus* dissolving pulps will be discussed, as well as the efforts on the incorporation of functionalities, to meet more demanding technical and performance requirements.

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