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CAPACITÉS DEVELOPS A BIOPLASTIC FROM MICROALGAE

#Packaging #Bioplastic #Biomaterials #Microalgae #BiomassProduction
#Photobioreactor #ProcessAutomation

German company ONE.FIVE is looking to stand out in the packaging industry thanks to biosourced materials. Back in 2021, they teamed up with the GEPEA laboratory and CAPACITÉS to develop a bioplastic made from microalgae. With support from the AlgoSolis R&D facility, the experts explored ways to produce this bioplastic more cost-effectively. They delivered a turnkey protocol, which includes the production of bioplastic.

STRAIN SCREENING AND PROCESSES FOR BIOPLASTICS' MANUFACTURING

ONE.FIVE quickly turned to the GEPEA laboratory and the Loire Valley ecosystem as its go-to partners in the microalgae sector. Aiming to develop an innovative bioplastic for the packaging market, the company chose the GEPEA and CAPACITÉS to explore cost-effective production options.

amount of desired polymer. The third and final stage involved plasticizing the biomass using a direct plasticization method, followed by an extrusion step to form a film. The experts then characterized the bioplastic to validate its mechanical strength and thermoplastic properties.

The project was carried out in three stages, resulting in a turnkey production protocol. First, the experts focused on selecting the best strain and culture conditions that met the predefined performance criteria. A customized cultivation process was then developed. Involving physiological stress, this process doubled the

To successfully complete this project, the CAPACITÉS teams used the technical resources of the AlgoSolis R&D facility and benefited from the support of the GEPEA laboratory, joint research unit of Nantes Université, Oniris, IMT Atlantique and CNRS (The French National Centre for Scientific Research). ■

This project was supported by:

one • five

Area of expertise:

- Microalgues

CAPACITÉS

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