



Programa EngIQ – Edição 13 – Informação adicional dos projetos

Projetos de doutoramento com início em outubro de 2021.

EngIQ_BD2021-08: Biorefinery of Microalgae Rich in Nonpolar Compounds: Development and Implementation of Processing Strategies in an Industrial Unit in Portugal. Empresa: A4F

Microalgae are extremely competitive with other plant crops and have an enormous potential to be used as a feedstock for biofuels and biorefinery products. Over the last few years, the cultivation of microalgae has proved to be a pathway with high potential for replacement products such as biofuels, food, pharmaceutical, cosmetic and nutraceutical applications. Microalgae are highly efficient and can be integrated with carbon fixation from waste gas streams. Moreover, they do not compete with the food and feed sector since they can grow in non-arable land, they can be produced in a continuous process and are not seasonal.

The biorefinery concept aims to convert microalgae biomass in diverse products using a cascading approach from higher-to-lower value, including bioproducts such as omega-3 fatty acids, pigments, terpenoids, specialty enzymes, biomaterials, biochemicals, bioalcohols, and biofuels. The full value-chain of the biomass is the critical step since it is important to involve several market sectors. The success of the microalgae business is closely linked not only to the optimization of the industrial production process, but also to the optimization of the process-chain involved in obtaining added-value products from microalgae: production, harvesting, dewatering, disruption, extraction, separation, purification and conversion. The focus of this PhD proposal is the development, optimization and implementation of strategies for the biorefinery of microalgae rich in nonpolar compounds with the aim to exploit the maximum value of the microalgae biomass.

O diretor do EngIQ

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