

Chemistry Department

Recovery of Bioactive Compounds

Biochemical and Process Engineering Group



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(PhD Student, since 2009)

2009-Present PhD in
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Objectives

The main focus of the research is the development of an optimised process for valorisation of deodorizer distillates from vegetable oil refining, through the production and recovery of sterol esters produced by an integrated enzymatic reaction – membrane separation approach.

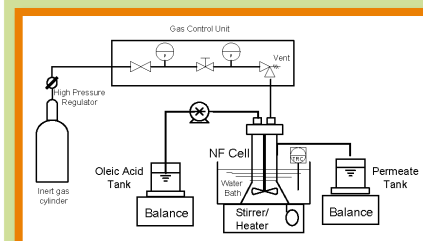
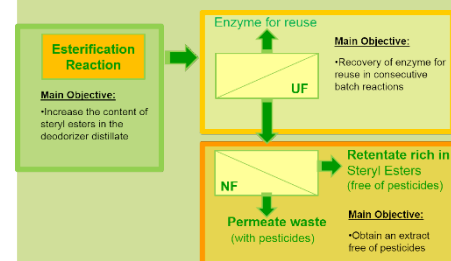
Methodology

- Optimise of the esterification reaction using an experimental design approach, in order to understand the role and influence of the main reaction parameters.
- Design and optimise the process of enzyme recovery and reuse by membrane microfiltration/ultrafiltration, in order to improve the reaction turnover and the recovery of the target sterol esters products in the permeate stream;
- Optimisation of fluid dynamics in a spiral wound module by CFD, taking into account 3D effects in flow and velocity fields
- Establish a mass transfer correlation, in order to predict the mass transfer coefficient, k_p

Expected Results

Development of a based-membrane process for production of a bioactive product rich in sterol esters and free of pesticides.

This product may be used as additive in food industry for cholesterol decreasing.



Funding:

Fundação para a Ciência e a Tecnologia through the PhD research grant SFRH/BD/46023/2008