



MACHINE LEARNING FOR EMPOWERING THE BIO-ECONOMY: USING LOWER GRADE FEEDSTOCKS FOR THE PRODUCTION OF FATTY ACIDS AT AN INDUSTRIAL SCALE

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BACKGROUND

All

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Introduction

The bio-economy holds the solutions to many of today's environmental challenges. In the oleochemical industry, natural fats and oils are used as an alternative to crude oil. Fatty acid composition, minor components and quality vary greatly among these oils and fats. Operating a continuous installation with a variable feed composition poses significant challenges for process control to ensure resource efficiency, high product yields and excellent product quality. The general purpose of this master thesis is to use machine learning techniques to study the relationship between the quality of the feed, a (large) number of process variables and the quality/composition of the outgoing product stream for the fatty acid plant of Oleon N.V. in Ertvelde.



Scope of the thesis

This thesis is in collaboration with an industrial partner, Oleon N.V., which is a market leader for oleochemical products with a global presence and with its headquarters near Ghent, Belgium. During the thesis, the student will have the opportunity to be in regular contact with Oleon to discuss about the processes, gather data, or visit the facilities to have a better understanding on the feedstocks, products and processes.

