

# Increase of the value capture of the Cluster AP through operative excellence

**Master thesis presented by Gemma Berenguer  
Barceló**

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from the Universitat Rovira i Virgili

Company Supervisor: Enrique Pelegrín Izquierdo

URV Tutor: Pere Gabarra Gironès

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## **EXECUTIVE SUMMARY**

The project is part of BASF internal research and is under confidential restrictions. The person who wishes to get more information should directly contact the company.

The Master thesis report presented provides all the information on the academic project “*Increase of the value capture of the Cluster AP through operative excellence*” performed during an internship with the company BASF Española S.A. obtained through the Work Experience Award promoted by the URV. This thesis aims to take a step further towards operative excellence through process optimization, mainly focusing on energy efficiency. To provide context for the project, a brief explanation about the company and its divisions is provided, as well as an overview of the global perspective of the fungicide market. Then, a generic explanation of the production process is found with its block diagrams, describing at the same time the final product Kresoxim-Methyl and its properties. After defining the scope of the project and the student’s role in the company during the stay in the company, the approach methods and study of solutions for energy optimization are explained, which include from preliminary tests, simulation, and modelling, through basic and detailed project engineering.

During the project engineering, a whole analysis of the current energy situation of the plant is carried out, as well as its optimization and a study of different proposals to evaluate the best process route to reduce energy consumption and dissipation. Once these factors are completed, an economic estimate of the savings in direct utility costs is made, as well as an environmental impact evaluation of indirect greenhouse gas emissions associated with the production of said utilities. Adding to that, a series of complementary actions to this energy optimization are proposed, affecting other operative excellence principles as well, like energy waste reduction and resource management. Finally, a conclusion is reached according to the data obtained with a new approach towards energy management, obtention and distribution in the Cluster AP.

The work described in this thesis can serve as a reference to be aware of the importance of optimization of resources and the continuous improvement of an industrial process to be able to get closer to operational excellence.