April 2019

Optimization of the Filtration Method for Yellow Dispersion

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Optimization of the Filtration Method for Yellow Dispersion

A Major Qualifying Project Report

submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

In partial fulfillment of the requirements for the

Degree of Bachelor of Science

by

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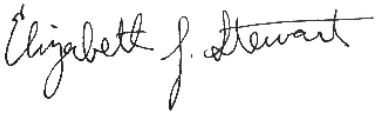
Date: April 16, 2019

Approved:

Professor Stephen Kmiotek, Major Advisor



Professor Elizabeth J. Stewart, Major Advisor

Cabot Corporation, a global leader in the specialty chemical and performance material industry, has been developing ink dispersions for inkjet printers for the packaging industry. The goal of this project was to explore methods for optimizing the filtration process of Cabot's yellow dispersion focused on the impact of changes to their operational procedure and an analysis of new filtration technologies. We found that changes in operational procedures such as recirculation and increased flow rate did not improve the efficiency of pre-filtration within the process; however, the introduction of new filter technology had a more sufficient impact. Our results demonstrate the benefit of using filter aids in a double pass method to obtain satisfactory throughput and filtration standards.

This MQP contains information deemed confidential to the business interest of the industrial sponsor. Please contact Stephen Kmiotek at sjkmiotek@wpi.edu for additional information.