

**DEVELOPMENT OF AUTOMATIC DETERGENT INJECTOR
ON LAUNDRY MACHINE SIMULATION**

By

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11301017

BACHELOR'S DEGREE
in

MECHANICAL ENGINEERING – MECHATRONICS CONCENTRATION
FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

SWISS GERMAN UNIVERSITY

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August 2017

Revision after the Thesis Defense on 24th July 2017

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

DEVELOPMENT OF AUTOMATIC DETERGENT INJECTOR ON LAUNDRY MACHINE SIMULATION

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This thesis studies the working principle of centrifugal pumps, peristaltic pumps, and gear pumps in general which further designated as a detergent pumping device. Experiments are conducted through several pumps which are compatible to be designed in this purpose. The selected pump will be further developed to an automatic laundry detergent injector by integrating the pumping system into a universal laundry controller. A capability to deliver a constant volume of detergent efficiently is mandatory for the automated injection system. The detergent pumping system is designed with the reliability and constancy in pumping process.

Different laundry processes are generated inside the controller. By analyzing the behavior of the controller I/O in each different process, the integration system can be developed. The communication between the laundry controller and the pumping system is associated by utilizing arduino mega controller. Final result of this study is demonstrated through a laundry process simulation with a reliable and efficient automatic detergent injector.

Keywords: peristaltic, integration, I/O, simulation.



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DEDICATION

I dedicate this work to Jesus Christ and my parents.



ACKNOWLEDGEMENTS

I would like to thank God firstly for his blessing throughout this thesis, secondly I would like to thank to my father, my mother, my brother, and my sister who always support and encourage me. I would not have made this far without them.

I would like to thank my advisor, Leonard P. Rusli, M.Sc, Ph.D. and my co-advisor, Dr. Rusman Rusyadi, M.Sc, for their advice and guidance to achieve the thesis objectives. I would like also to thank Mr. Freddy for his assistance and direction in the workshop.

I wish to thank my colleagues and friends, especially Daniel Setiono, Stanley Andrianto, Bagas Sinar Bintang, Rynaldi Maydrian Lauren, Michael Kevin, Richard Adrian, and Immanuel Michael Budiman for their support throughout my thesis. I also wish to thank all mechatronics 2013 fellow students for the unforgotten memories of my college life

Thanks to Swiss German University for the opportunities to study mechatronics, experiencing internship local and abroad, and for this final assignment.

Last but not least, I would like to give my special thanks to Putri Astari Dewi for her encouragement and support whenever I fall during this work.

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