IMPLEMENTATION OF DOUBLE-AXIS CLEANING MECHANISM AND VISUAL INSPECTION TO IMPROVE THE PERFORMANCE OF SELF CLEANING PHOTOVOLTAIC MODULE ROBOT

By

Hagen Jevon Oszarwin
11301018

BACHELOR'S DEGREE
in

MECHANICAL ENGINEERING – MECHATRONICS CONCENTRATION
FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

January 2018
Revision after the Thesis Defense on 18 January 2018

STATEMENT BY 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.

Hagen Jevon Oszarwin

_____ _____

Student Date

Approved by:

Erikson Ferry S. Sinaga, ST, M.Kom

_____ _____

Thesis Advisor Date

Dr. Irvan Kartawiria, S.T., M .Sc.

_____ _____

Dean Date

ABSTRACT

IMPLEMENTATION OF DOUBLE-AXIS CLEANING MECHANISM AND VISUAL INSPECTION TO IMPROVE THE PERFORMANCE OF SELF CLEANING PHOTOVOLTAIC MODULE ROBOT

By

Hagen Jevon Oszarwin
Erikson Ferry S. Sinaga, ST, M.Kom, Advisor

SWISS GERMAN UNIVERSITY

The purpose of this thesis is to further develop the cleaning mechanism to improve the performance of energy harvesting for Photovoltaic module. In this thesis there are several implementations that are required to be done. The improvement of this project will be the implementation of double axis cleaning mechanism for the robot cleaner. The data taken will be stored in thinkspeak.

Keywords: PV panel, Self-Cleaning Robot, Energy Harvesting, Dual-Axis Mechanism

DEDICATION

I dedicated this thesis project for the future of technology and development in all parts of the world.

ACKNOWLEDGEMENTS

First of all, I would like to express my gratitude to God for His love and care which help me to clear this thesis project in time.

Secondly, I would like to express my gratitude to my family, who always support me and keep pushing me to finish this thesis.

Furthermore, I would like to give my deepest gratitude to Erikson Ferry S. Sinaga, ST, M.Kom, as my advisor for his lectures, guidance, patience, and support that allows me to finish my thesis project.

Last but not least, I would also like to give my deepest gratitude to my friends who have shared these last few years with me, SGU Lectures, and all my colleagues. Without all of those who have listed above, I may not be able of finish this thesis project.

TABLE OF CONTENTS

Page