AUTEHENTICITY STATEMENT

For the sake of Allah SWT, I confess this work is on my own work except for the summaries of the sources that had been cited and mentioned. If someday in future my confession is proved to be wrong and dishonest that resulting in the violence of academic misconduct and legal regulation of the papers and intellectual property rights, then I am willing to return my degree I have received to be withdrawn by Universitas Islam Indonesia.

Yogyakarta, August 2019



Amalia Syaharani Ibnu

THESIS APPROVAL OF SUPERVISOR

EVALUATION ON PRODUCTIVITY AND ENVIRONMENTAL IMPACT OF POLYETHYLENE TEREPHTALATE (PET) DRINKING BOTTLE PRODUCTION PROCESS USING LIFE CYCLE ASSESSMENT AND OPTIMIZING USING ECO-EFFICIENCY IN ECONOMIC MINDSET (AT PT. TIRTA INVESTAMA – AQUA DANONE)

THESIS

By

Name : Amalia Syaharani Ibnu

Student number : 15522032

Yogyakarta, July 2019

Supervisor,

(Muhammad Ridwan Andi Purnomo, S.T., M.Sc., Ph.D.)

THESIS APPROVAL OF EXAMINATION COMMITTEE

EVALUATION ON PRODUCTIVITY AND ENVIRONMENTAL IMPACT OF POLYETHYLENE TEREPHTALATE (PET) DRINKING BOTTLE PRODUCTION PROCESS USING LIFE CYCLE ASSESSMENT AND OPTIMIZING USING ECO-EFFICIENCY IN ECONOMIC MINDSET (AT PT. TIRTA INVESTAMA – AQUA DANONE)

By

Name : Amalia Syaharani Ibnu

Student number : 15 522 032

Was defended before Examination Committee in partial fulfillment of the requirement for the bachelor degree of Industrial Engineering Department

Universitas Islam Indonesia

Examination Committee

Muhammad Ridwan Andi Purnomo, S.T., M.Sc., PhD.

Examination Committee Chair

Winda Nur Cahyo, S.T., M.T., Ph.D.

Member I

Dr. Taufiq Immawan S.T., M.M.

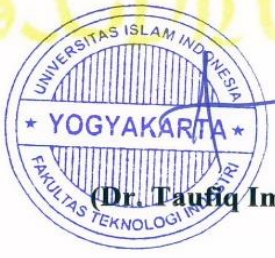
Member II

Acknowledged by,

Head of undergraduate program

Department of Industrial Engineering - Faculty of Industrial Technology

Universitas Islam Indonesia



(Dr. Taufiq Immawan S.T., M.M.)

DEDICATION

In dedication to my parents and my only sister, Mr. Ibnu, Mrs. Umi and Anya, whose affection and prays of day and night make me able to get through all of these. Thank you who have always provided during every endeavor in my life. I am grateful for the constant love and encouragement my parents, without whom this thesis would not have been completed earlier.

None, of this would have been possible without the support and assistance of my super-kind-supervisor,

Mr. Muhammad Ridwan Andi Purnomo, ST., M.Sc., PhD.

Also, this thesis is dedicated to those who loves me unconditionally, who makes my life wonderful, thanks, thanks!

MOTIVATIONAL QUOTES

"And that there is not for man except that [good] for which he strives."

(Quran Surah An Najm verse 39)

"Focus on your goal, because the show must go on. No excuse."

(Soleh Ibnu)

PREFACE

Assalamualaikum Warahmatullahi Wabarakatuh

Al-hamdu lillahi rabbil 'alamin and Gratitude are presented to Allah SWT the Highest, Glory to Allah Unending, The Exalted, Who granted me the primary inspiration and stamina all along to complete this thesis work as partial requirement in acquiring the degree of Sarjana Teknik, entitled "Evaluation on productivity and environmental impact of PET drinking bottle production process using Life Cycle Assessment and Optimizing using Eco-efficiency in economic mindset". Sholawat and gratitude from Rasulullah Shallallahu'alaihi Wasallam with his family and friends that we await syafaat in the end of the day. Also Blessing of His grace so the Author can complete the thesis project in PT. Tirta Investama Klaten.

The assistance, guidance, support and many helps, either directly or indirectly, from some parties involved. On this occasion, Author would like to appreciate and thank to all of the parties below:

1. My beloved family members who always give prayers, supports, and encourage to Author during conducting and completing this Undergraduate Thesis.
2. Muhammad Ridwan Andi Purnomo, ST., M.Sc., Ph.D. as the most-super-kind-supervisor who always give his valuable assistance, motivation and guidance to the completion of this Undergraduate Thesis.
3. Winda Nur Cahyo, S.T., M.T., Ph.D. as the examiner who kindly give guidance for suggestion and recommendation to improve the thesis quality.
4. Dr. Taufiq Immawan S.T., M.M. as the examiner who kindly give minor revision and question to get deeper understanding.
5. Dean of the Faculty of Industrial Technology, Universitas Islam Indonesia.
6. Head of Undergraduate Program Department of Industrial Engineering, Universitas Islam Indonesia.
7. All lecturers of the Department of Industrial Engineering, Universitas Islam Indonesia who have given knowledge and sharing the experience.

8. PT. Tirta Investama Klaten which has provided opportunities and have facilitated the author to involve and complete the thesis project.
9. My friends of Industrial Engineering batch 2015, both International Program and regular, my alumni, my senior and my junior for the support, spirit, and enthusiasm for Author.
10. Mrs. Diana and Mrs. Devy who patiently help the students since the first year until present, both for academical or non-academical errand.
11. Putri Amalia, Nurcah, Reno, Sayid, Adam and other Delsim Laboratory assistant family who bring joyful, all the support and help.
12. Syaema, Rasela, Tsalitsa, Yosita, Adrina those who always sending much love and support even miles away from each other.
13. All parties who cannot be mentioned one by one by Author for the assistance in completing this Undergraduate Thesis.

Last, but definitely not least, the Author realizes that there are still shortcomings as well as weaknesses in this thesis, so the suggestions and critics are fully expected. Hopefully this thesis and information included will be useful for Author and give benefit to other parties who read this.

Wassalamu'alaikum Warahmatullahi Wabarakatuh

Yogyakarta, June 2019

(Amalia Syaharani Ibnu)

15522032