

**WEB-BASED REAL-TIME ENERGY MONITORING FOR
LOYOLA BUILDING AT ATMI CIKARANG**

By

ALFONSUS TRI WIDIYATMOKO

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SWISS GERMAN UNIVERSITY

The Prominence Tower
Jl. Jalur Sutera Barat No. 15, Alam Sutra,
Tangerang, Banten 15143 - Indonesia

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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.

Alfonsus Tri Widiyatmoko, S.T.

Student

Date

Approved by:

Dr. Ir. Widi Setiawan

Thesis Advisor

Date

Aulia Arif Iskandar, S.T., M.T.

Thesis Co-Advisor

Date

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

Dean

Date

Alfonsus Tri Widiyatmoko

ABSTRACT

WEB-BASED REAL-TIME ENERGY MONITORING FOR LOYOLA BUILDING AT ATMI CIKARANG

By

Alfonsus Tri Widiyatmoko, S.T.

Dr. Ir. Widi Setiawan

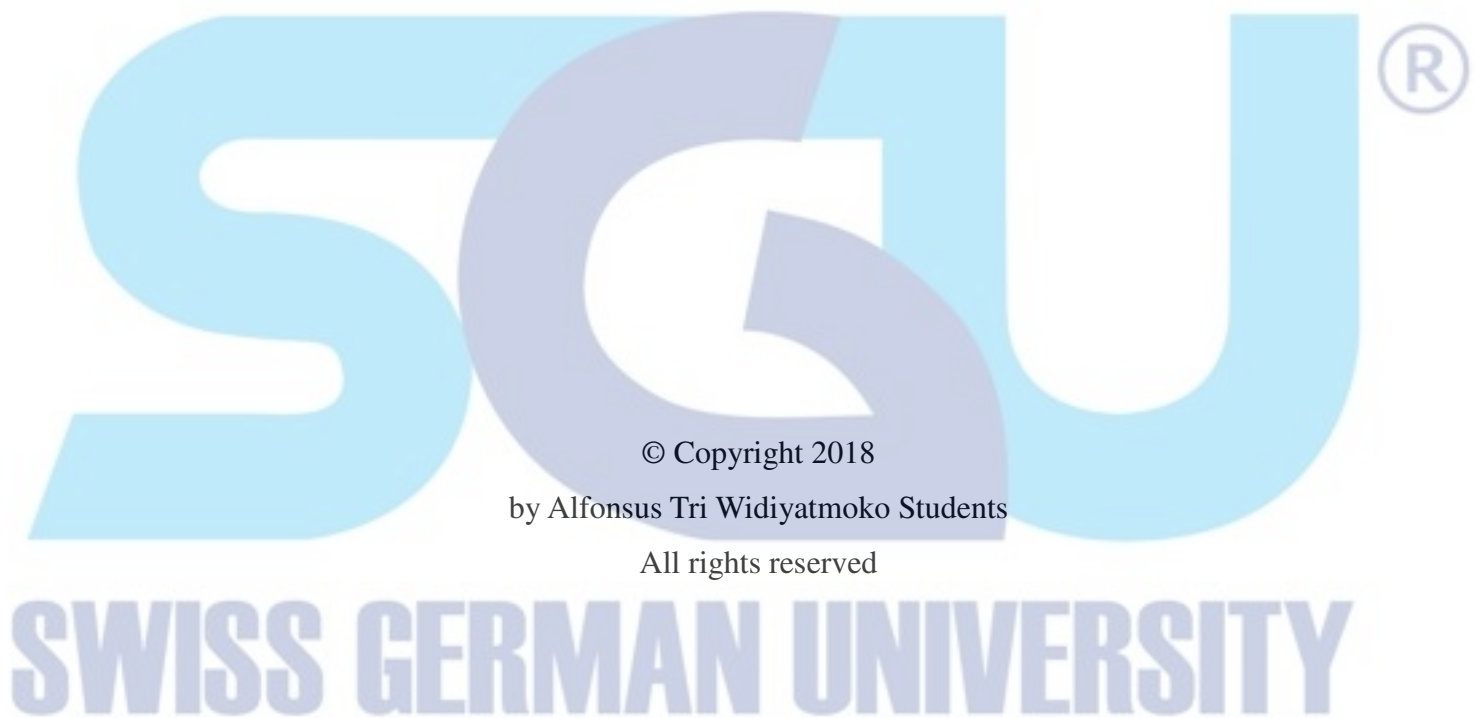
Aulia Arif Iskandar S.T., M.T.

SWISS GERMAN UNIVERSITY

Increased growth of the national economy makes rise of people's electricity consumption. Fundamental understandings of how energy is being consumed, monitored, and controlled are the prerequisite keys of an energy consumption optimization. Users who know exactly when energy consumption occurs and where it takes place are able to make better decisions on how to optimize their building's energy consumption rate. In this study, the energy monitoring and control system has been designed for Loyola Building at ATMI Cikarang. The current will be measured using current sensor SCT 013-000 and the result shows a deviation of 0.5A comparing with the measurement using clamp meter which is used as a calibrator tool. The web-based energy monitoring uses Board Wemos D1. There is a wifi module esp8266 for connecting to the wifi router and connected to the internet. We can access the data through an Android application called Blynk. This application can also be used as a user's guide interface where we can monitor the real-time current and power. The data is recorded in SD card and processed to acquire the graph of the mean and the maximum energy consumption. Furthermore, we can manually control the electrical socket using the Blynk application. As an example, optimization of the energy consumption using the prototype was conducted and showed that an energy saving of about 12,5 % can be achieved.

Keyword: *Energy, SCT 013, Wemos D1, Blynk, Monitoring*

Alfonsus Tri Widiyatmoko



DEDICATION

I dedicate this works for my God, Jesus Christ, and Holy Spirit has blessed me from the beginning until now.

The second, for my beloved parents, for greatness of love while keeping spirit and inspirable of my life.

Also this research is dedicated for our beloved ATMI Cikarang and Swiss German University.



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