

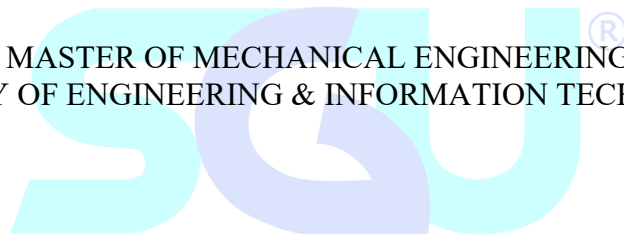
DESIGN AND DEVELOPMENT OF
AUTOMATIC AIR FLOW DATA COLLECTOR FOR
HIGH VOLUME AIR SAMPLER

By

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2-2352-025

MASTER'S DEGREE
in

MASTER OF MECHANICAL ENGINEERING
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Revision after the Thesis Defense on February 7, 2025

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

DESIGN AND DEVELOPMENT OF AUTOMATIC AIR FLOW MONITORING FOR HIGH VOLUME AIR SAMPLER

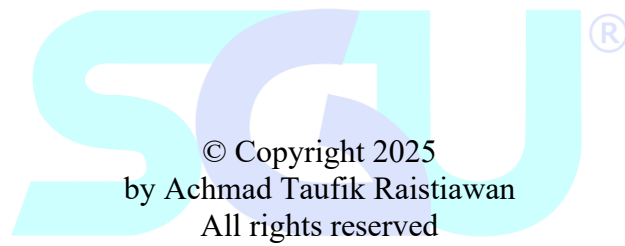
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The monitoring of air flow is a crucial aspect in various industrial and environmental applications, as it provides essential data for ensuring optimal performance, safety, and sustainability. This thesis presents the development of an online air flow monitoring system that utilize air flow sensors and an Arduino microcontroller to enhance data accuracy and traceability. The proposed system is able to seamlessly integrate state-of-the-art air flow sensors, enabling real-time monitoring and data collection that addresses the limitations of conventional air quality monitoring methods, which often lack data accuracy and resolutions. The developed system demonstrates the potential of combining advanced sensor technologies, microcontroller-based architectures, and data integration strategies to create a comprehensive and efficient air flow monitoring solution, contributing to the broader field of building performance management and IoT-enabled environmental monitoring.

Keywords: air flow, air sampling, IOT, microcontroller, monitoring, sensor



DEDICATION

I dedicate this work for the future of the country I love, Indonesia
and the development of technology in the Mechatronics field of study.



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I have found my coursework throughout the Curriculum and Instruction program to be stimulating and thoughtful, providing me with tools with which to explore both past and present ideas and issues.



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