

FINAL PROJECT

**THE STUDY OF FRICTION COEFFICIENT, BRAKE
PADS TEMPERATURE AND ADDHESIVE RESISTANCE
ON BRAKE PADS USING FLY ASH COAL**



**Submitted as a Partial Fulfillment of the Requirements for
Getting Bachelor Degree of Engineering in Automotive Department**

**Arranged by:
Agus Syafaruddin**

D 200 090 210

**MECHANICAL ENGINEERING DEPARTMENT
INTERNATIONAL PROGRAM
IN AUTOMOTIVE/MOTORCYCLE ENGINEERING
MUHAMMADIYAH UNIVERSITY OF SURAKARTA
November 2014**

DECLARATION OF RESEACH AUTHENTICITY

I assert verily that the research entitles.

**THE STUDY OF FRICTION COEFFICIENT, BRAKE PADS TEMPERATURE
AND ADDHESIVE RESISTANCE ON BRAKE PADS USING FLY ASH
COAL**

That made to fulfill some of requirement to get Bachelor Degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta, as far I know is not a plagiarism of research that has been published, except the information source that to solve the problem.

Surakarta, October 2014

Researcher,

Agus Syafaruddin

APPROVAL

The Final Project entitles "The Study of Friction Coefficient, Brake Pads Temperature and Addhesive Resistance on Brake Pads Using Fly Ash Coal" has been approved by Supervisors and authorized by Secretary of International Program as partial fulfillment of the requirements for getting the Bachelor Degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta.

Written by:

Name : **Agus Syafaruddin**

NIM : **D 200 090 210**

Has approved and legalized on:

Day :

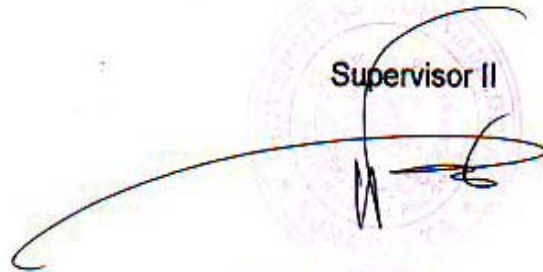
Date :

Supervisor I



(Supriyono, ST, MT, Ph.D)

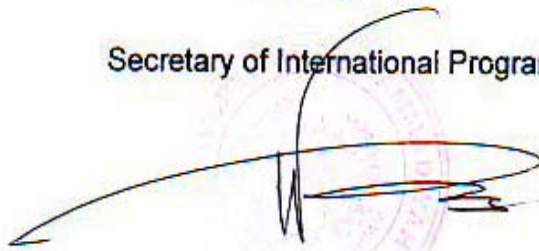
Supervisor II



(Wijianto, ST, M. Eng. Sc)

Admitted by,

Secretary of International Program



(Wijianto, ST, M. Eng. Sc)

VALIDATION

The Final Project entitles "The Study of Friction Coefficient, Brake Pads Temperature and Adhesive Resistance on Brake Pads Using Fly Ash Coal" has been approved by Supervisors and authorized by Secretary of International Program as partial fulfillment of the requirements for getting the Bachelor Degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta.

Written by:

Name : Agus Syafaruddin

NIM : D 200 090 210

Has approved and legalized on:

Day :

Date :

Team of Examiners :

Chair Person : Supriyono, ST, MT, Ph.D.

Member 1 : Wijianto, ST, M. Eng. Sc.

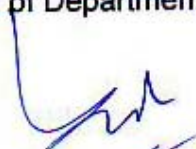
Member 2 : Ir. Pramuko Ilmu Purbo P, M.T.



Admitted by,

Dean,

(Ir. Sri Sunarjono, M.T, Ph.D)

Head of Department,

(Tri Widodo Besar R. M. Sc. Ph.D)

**THE STUDY OF FRICTION COEFFICIENT, BRAKE PADS
TEMPERATURE AND ADDHESIVE RESISTANCE ON BRAKE PADS
USING FLY ASH COAL**

Agus Syafaruddin

Automotive Engineering Department of Muhammadiyah University of Surakarta
Jln. A. Yani Pabelan, Kartasura, Tromol Pos I, Telp. (0271) 715448 Surakarta
Email: Udinchizha@ymail.com

ABSTRACT

Abstract:

Brake pads are one component of a motor vehicle which is used to slow or stop the vehicle. When at high-speed vehicle brake has a very important role. The purpose of this study was to investigate the influence of the environment in the form of spraying with water, sea water, and oil to the friction coefficient of the brake pads and investigate adhesion resistance resulting of a break from the manufacture of brake pads Fly Ash compared with Honda Genuine Parts brake.

This research was conducted by mixing ingredients brake pads according to a predetermined composition, press the brake pads with a load of 3 tons for 30 minutes, then heated to a temperature of 120 °C for 30 minutes. The method is performed in testing the friction coefficient is based on the standard ASTM C1028. To determine the value of the resistance of glue or adhesive shear loads due to the brake pads using the ASTM D3737 standard, in place

on the die according to ASTM standard D905. Analysis is conducted after got data of testing result.

The results showed that the friction coefficient brake Honda Genuine Parts at 0.64μ while the friction coefficient brake Fly Ash of 0.60μ . But the brake condition given spraying water, sea water, and oil brake Fly Ash is better than Honda Genuine Parts. From the test results and the calculation of shear strength indicates that the brake pads Fly Ash not better than the Honda Genuine Parts brake. This is evidenced from the results of testing the shear strength of Honda Genuine Parts brake at 3.552×10^6 (N/m²) while the brake Fly Ash at 2.471×10^6 (N/m²).

Keywords: *Brake pads, fly ash coal, friction coefficient*

MOTTO

Success is not measured by wealth, success is an achievement that we want.

To get a success, your courage must be greater than your fear.

Do whatever you like, be consistent, and success will come naturally.

Intelligence is not the determinant of success, but hard work is the real determinant of your success.

Wise man talks because they have something to say. Fool man talks because they have to say something.

If you cannot be a smart person, so be a good person.

“Verily, never will Allah change the condition of a people until they change it (their state of goodness)”

(QS. Ar-Ra'du:11)

“Nay, seek (Allah's) help with patient perseverance and prayer: It is indeed hard, except to those who bring a lowly spirit” (QS. Al-Baqarah: 45)

DEDICATION

This Research paper is dedicated to:

Allah SWT,

Thanks for the best everything that you have given for me and thanks for you love that always make me to never give up to do the best. I believe that you will always give me the best for everything.

My beloved (Alm) Mom and (Alm) Dad,

Thanks for your prayer, love, support and affection.

You always give me happiness but often I made you disappointed.

I am sorry and I promise to give you the best the future.

My Brother and My Sister

Thanks for your supports.

It is make me strong to get something more and more.

As long as I know you, you make me to be better and adult.

All my friends (Automotive Engineering '09, etc)

Thanks for your supports and love me.

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The writer realizes that this research paper is far from being perfect, so the writer sincerely welcomes any constructive comment, criticism, and suggestin from anyone.

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Surakarta, October 2014

Writer,

Agus Syafaruddin

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