

APPLICATION OF COMPUTER VISION FOR COUNTING OIL PARTICLE CONTAMINANT

By

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22152002

MASTER'S DEGREE
in

MECHANICAL ENGINEERING – ENGINEERING MANAGEMENT
FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY



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June 2022

Revision after Thesis Defense on 05 July 2022

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

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Contaminant particles in the oil are an indication of the condition of a part or engine. The large number of particles in the oil provides information that it is necessary to check and maintain the engine. If the particles in the oil are left unattended, there will be damage to parts, even worse, engine failure. Therefore, it is important to know how many particles are in the oil and ISO provides an assessment criteria for the cleanliness of the oil, which is determined based on the particle size and the number of particles. In this study, particles whose number and size were calculated were obtained from a membrane that had been poured with 100 ml of oil, then under a microscope, the image of the membrane was captured and using computer vision to determine the particle size and number of particles, after that the expected output was the criteria based on ISO Cleanliness 4406 table. Based on the experimental results, the computer vision application can detect the number and size of particles in the image and provide results in accordance with the ISO Cleanliness table. Computer vision applications can be used to calculate the number of particles in the oil.

Keywords : Contaminant Particle, Engine Failure, ISO Cleanliness 4406, Computer Vision

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DEDICATION

I dedicated this research for My Family & PT. Kelmers Indonesia

ACKNOWLEDGEMENTS

I would like to thank to Mr. Dr. Ir. Henry Nasution, M.T. as advisor and Mr. Dr. Ir. Widi Setiawan as Co-advisor who always give advice and support and all Lecturers who have guided me while studying in Swiss German University. And also, to Mr. Samuel Onasis from PT. Kelmer Indonesia who give full support to do experiment and take data for finished this thesis.

LIST OF CONTENTS

STATEMENT BY THE AUTHOR.....	2
ABSTRACT.....	3
COPYRIGHT.....	4
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
LIST OF CONTENTS.....	7
LIST OF FIGURES.....	9
LIST OF TABLES.....	11
CHAPTER I INTRODUCTION.....	12
1.1 Background.....	12
1.2 Research Problem.....	14
1.3 Research Objectives.....	14
1.4 Significance of Study.....	15
1.5 Research Questions.....	15
1.6 Expected Result.....	15
CHAPTER II LITERATURE REVIEW.....	16
2.1 Wear.....	17
2.1.1 Adhesive Wear.....	18
2.1.2 Surface Fatigue.....	20
2.1.3 Abrasive Wear.....	20
2.1.4 Erosive Wear.....	22
2.1.5 Corrosive Wear.....	22
2.1.6 Fretting Wear.....	23
2.2 Friction.....	23
2.2.1 Dry Friction.....	23
2.2.2 Viscous Friction.....	24
2.3 Lubrication.....	24
2.3.1 Full Film Lubrication.....	25
2.3.2 Boundary Lubrication	25

2.3.3	Mixed Lubrication	26
2.4	Contamination.....	26
2.4.1	Particle Wear Debris.....	26
2.4.2	Particle Counting.....	26
2.4.3	Effect of Contamination.....	27
2.4.4	Contamination Control.....	28
2.5	Image processing.....	29
2.6	Blob analysis.....	30
2.7	OpenCV.....	32
2.8	Previous Study.....	33
CHAPTER III RESEARCH METHODE.....		34
3.1	Research Flowchart.....	34
3.2	Timeline.....	35
3.3	Conceptual Design.....	35
3.4	Procedure Sample Oil Membran.....	37
3.5	Flow chart image processing.....	39
CHAPTER IV RESULT & DISCUSSION.....		41
4.1	Setting parameters.....	41
4.2	Research experiment.....	45
4.2.1	First experiment.....	45
4.2.2	Second experiment.....	48
4.2.3	Third experiment.....	50
4.2.4	Fourth experiment.....	53
4.2.5	Fifth experiment.....	55
CHAPTER V CONCLUSIONS and RECOMMENDATION.....		58
5.1	Conclusions.....	58
5.2	Recommendation.....	59
REFERENCES.....		60
CURRICULUM VITAE.....		62
APPENDICES.....		63

LIST OF FIGURES

Figure 1.1	ISO Cleanliness Oil 4406.....	13
Figure 2.1	Tribology area : wear, friction and lubrication	16
Figure 2.2	Tribology Contact.....	17
Figure 2.3	The wear process : mild wear, severe wear and failure.....	17
Figure 2.4	Progression of wear.....	18
Figure 2.5	Mild wear particle	19
Figure 2.6	Severe wear particle	19
Figure 2.7	Rolling fatigue wear particle	20
Figure 2.8	Mechanism of Abrasive Wear.....	21
Figure 2.9	Erosion Process	22
Figure 2.10	Coefficient static friction as a function of rest time.....	23
Figure 2.11	Fluid friction.....	24
Figure 2.12	Lubricant film parameter (h/α) and coefficient of friction	25
Figure 2.13	Metallic particle inside oil	28
Figure 2.14	Difference between proactive and predictive maintenance.....	29
Figure 2.15	Pixel matrix and values.....	30
Figure 2.16	A binary images containing different shapes.....	31
Figure 2.17	Blob detector parameters.....	31
Figure 3.1	Research flow chart	34
Figure 3.2	Conceptual design.....	35
Figure 3.3	Flowchart image processing.....	39
Figure 4.1	Original image.....	42
Figure 4.2	Result of Table 4.1.....	42
Figure 4.3	Result of Table 4.2.....	43
Figure 4.4	Result of Table 4.3.....	43
Figure 4.5	Result of Table 4.4.....	44
Figure 4.6	Aspose software – merging multi image into one.....	45
Figure 4.7	Sample 1 - original image – multiple image into one image.....	46
Figure 4.8	Sample 1 - Blob detector Image.....	46

Figure 4.9	Sample 1 – ISO Number.....	47
Figure 4.10	Sample 1 ISO Number – Comparator Book.....	47
Figure 4.11	Sample 2 - original image – multiple image into one image.....	48
Figure 4.12	Sample 2 - Blob detector Image.....	49
Figure 4.13	Sample 2 – ISO Number.....	49
Figure 4.14	Sample 2 ISO Number – Comparator Book.....	50
Figure 4.15	Sample 3 - original image – multiple image into one image.....	51
Figure 4.16	Sample 3 - Blob detector Image.....	51
Figure 4.17	Sample 3 – ISO Number.....	52
Figure 4.18	Sample 3 ISO Number – Comparator Book.....	52
Figure 4.19	Sample 4 - original image – multiple image into one image.....	53
Figure 4.20	Sample 4 - Blob detector Image.....	54
Figure 4.21	Sample 4 – ISO Number.....	54
Figure 4.22	Sample 4 ISO Number – Comparator Book.....	55
Figure 4.23	Sample 5 - original image – multiple image into one image.....	55
Figure 4.24	Sample 5 - Blob detector Image.....	56
Figure 4.25	Sample 5 – ISO Number.....	56
Figure 4.26	Sample 5 ISO Number – Comparator Book.....	57

LIST OF TABLES

Table 2.1.	Comparison of Journal.....	33
Table 3.1	Timeline.....	35
Table 3.2	Tools computer vision.....	36
Table 4.1	1 st Parameter	41
Table 4.2	2 nd Parameter	41
Table 4.3	3 rd Parameter.....	41
Table 4.4	4 th Parameter	41
Table 4.5	Sample 1 – First experiment.....	48
Table 4.6	Sample 2 – Second experiment.....	50
Table 4.7	Sample 3 – Third experiment.....	53
Table 4.8	Sample 4 – Fourth experiment.....	55
Table 4.9	Sample 5 – Fifth experiment.....	57