

**THE PERCENT DEGRADATION OF ORANGE G DYE
BETWEEN SOLAR PHOTOCATALYTIC AND MICROBIAL
PROCESS**

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	ix
ABSTRAK	x
CHAPTER 1 INTRODUCTION	1
1.1 Background of the study	1
1.2 Problem statement	5
1.3 Significance of study	6
1.4 Objectives of study	6
CHAPTER 2 LITERATURE REVIEW	7
2.1 Introduction	7
2.2 Textile industry causes wastewater	7
2.3 Azo Dyes	8
2.4 Treatment method	9
2.5 Photodegradation of textile azo dye	10
2.6 Decolourisation and degradation of azo dye by bacteria	11
2.6.1 Azo dye decolourization under anaerobic condition	11
2.6.2 Azo dye decolourisation under aerobic condition	12
2.7 Bacteria degradation of azo dyes	13
2.8 Photocatalyst degradation	14
2.9 Effect pH	15
CHAPTER 3 METHODOLOGY	17
3.1 Material	17
3.1.1 Chemical and Reagent	17
3.1.2 Apparatus	18
3.2 Method of Microbial Photocatalytic	19
3.2.1 Sulphuric Acid (H ₂ SO ₄)	19
3.2.2 Sodium Hydroxide (NaOH)	19
3.2.3 Preparation of Culture bacteria	19
3.2.4 Preparation of media culture	20
3.2.5 Preparation of bacteria	20
3.2.6 Preparation of dye azo	21
3.2.6.1 Preparation of Orange G dye in Biological	21

3.2.7	Method for the degradation of azo dye	21
3.3	Method for Solar Photocatalytic	22
3.3.1	Photocatalyst	22
3.3.2	Preparation of Titanium Dioxide	23
3.3.3	Determine the maximum wavelength for Orange G dye solution	23
3.3.4	Calibration curve of Orange G solution	23
3.3.5	The effect of solar Irradiation to the rate of degradation	24
3.3.6	Photodegradation process by TiO ₂	24
CHAPTER 4 RESULT AND DISCUSSION		25
4.1	Decolourisation and degradation of Orange G dye	25
4.2	Efficiency of degradation for Orange G Dye	29
CHAPTER 5 CONCLUSION AND RECOMMENDATION		39
5.1	Conclusion	39
5.2	Recommendation	40
CITED REFERENCES		41
APPENDIX A		45
APPENDIX B		46
CURRICULUM VITAE		52

LIST OF TABLES

Table	Caption	Page
4.1	The blank absorbance of Orange G dye of Solar	26
4.2	The blank absorbance of Orange G dye of bacteria	26
4.3	The absorbance of Orange G dye under Solar at pH 3.5	27
4.4	The absorbance of Orange G dye under Solar at pH 7.5	27
4.5	The absorbance of Orange G dye under Microbial at pH 3.5	28
4.6	The absorbance of Orange G dye under Microbial at pH 7.5	39

ABSTRACT

THE PERCENT DEGRADATION OF ORANGE G DYE BETWEEN SOLAR PHOTOCATALYTIC AND MICROBIAL PROCESS

The dye in wastewater that can give the negative effect of aquatic life comes from industrial activity that is known as a major source of river pollutant. For the photocatalytic process, Orange G dye has been examined utilizing Titanium Dioxide in removing dye contaminants as photocatalyst. The sunlight reacts with TiO_2 to produce degradation reactions, but under the Microbial process, bacteria *Pseudomonas aeruginosa sp*, has been selected for the degradation process with the help of mineral salt medium. This study was conducted to evaluate the degradation process between in both processes that involves the same variables as initial pH, time and concentration. Based on the result, the higher percent in 10 ppm, 15 ppm and 20 ppm in the presence of photocatalyst were 22.6%, 16.14%, 31.07%, respectively while the higher percent of Orange G in 10 ppm, 15 ppm and 20 ppm under Microbial catalytic were 86%, 86.33% and 91.09%, respectively the optimum concentration which is 20 ppm was chosen in this study with wavelength 477 nm. The correlation efficiency for the standard solution prepared is nearly value one which is 1.0000. The absorbance for degradation of Orange G dye was determined by using UV-Vis Spectrophotometer. From the analysis, Microbial has higher percent degradation of Orange G compared to photocatalytic process with the same concentration, pH and time.